THE EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN SOUTH AFRICAN HIGH SCHOOLS

By

STEVEN S. TSHEHLA

submitted in fulfilment for the degree of

MASTER OF COMMERCE

in the subject

BUSINESS MANAGEMENT

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR KUDAKWASHE CHODOKUFA

21 July 2019

DEDICATION

This dissertation is dedicated to my wife and my late father, my pillar of strength – Belinda Nomacilongo Tshehla and Sarel Tshehla

"You are my pillar of strength, the flow of wisdom and the deed. My wife, thank you for constantly looking for good things even in unpleasant situations and taking me out of my comfort zone. Thank you for showing me love and supporting me throughout this journey. I would not ask for anything more in a woman, you are everything I always imagined".

DECLARATION

I, Steven Sotja Tshehla, student number 46717757, declare that the dissertation, "*Assessing the effectiveness of entrepreneurship education in High School learners in South Africa",* is my own work, and that all the sources that I have used or have quoted from have been indicated and acknowledged by means of complete references. The dissertation has not in part or in full, been previously submitted for any other degree or examination at this or any other university.

Steven S. Tshehla

22 July 2019

Date

ACKNOWLEDGEMENTS

I would like to acknowledge people and institutions who made this research possible. Firstly, I give thanks to God Almighty for giving me the wisdom, knowledge, strength, ability and prospect to undertake this study, to endure and complete it. Your mercy and favour have always prevailed in me.

To my supervisor, Dr Kudakwashe Chodokufa, thank you for your patience, encouragement, support, leadership and guidance throughout this study. It has not been easy, but you believed in me even when things were tough. This accomplishment would not have been possible without your leadership. You are appreciated.

To my wife, Belinda Nomacilongo Tshehla, my children Mbali, Mpumelelo and Thato Tshehla, your support gives me strength and power to push forward. Thank you for the love and support.

To my mom, Cristina Tshehla, my late dad, Sarel Tshehla, my sister, Nkola Tshehla, my brothers, Joseph, Dizon, Santos and Semaka Tshehla, and sister in-law Penney Bambalal, thank you for standing and closing the gap when need be. Your support is appreciated.

To my work support structure, Noxolo Mahapa, Ndlomo Mbonelwa, Tshegofatso Leballo, thank you for your encouragement and support.

To the participants in the study, I would like to thank you for the time and effort. Your contribution and honesty is greatly appreciated.

To my statistician, Andile Mtotywa, and team, thank you for your work, patience and great support.

*"Glory to **God** Almighty"*

ABSTRACT

Youth unemployment continues to be a problem globally, South Africa included. Amongst the remedies for youth unemployment was entrepreneurship. Entrepreneurship is regarded as the key pillar to economic growth and job creation. Furthermore, entrepreneurship education is beheld as stimulating entrepreneurial activity, enabling people to identify opportunities and start new business ventures. The primary focus of the study was to assess the effectiveness of entrepreneurship education in the high school learners in the city of Tshwane. The study was quantitative in nature, and utilised judgemental purposive sampling method as an approach to select the sample. The sample consisted of 240 grade 12 learners with entrepreneurship education in the form of Economic Management Science (EMS) as part of their syllabus. This sample was selected from high schools in three townships in the City of Tshwane namely Mamelodi, Atteridgeville and Soshanguve. A structured close-ended questionnaire was used to collect data. The analysis of the data was done using descriptive and inferential statistics using SPSS software.

According to the literature reviewed, knowledge and skills gained from entrepreneurship education programmes stimulate learners' entrepreneurship intentions and challenge learners to establish new businesses. The factors that emerged from the finding of the study were entrepreneurship skills, entrepreneurship knowledge, experiential learning, theoretical education and exploration of entrepreneurship. The findings have proven that there is a relationship between theoretical education, and experiential learning with learners' intention towards entrepreneurship. Furthermore, experiential learning was found to have a significant influence in developing entrepreneurship knowledge, entrepreneurship skills and entrepreneurship intention in learners. With these findings the objectives and hypothesis of the study were addressed.

The recommendations made to address the objectives of the study include one for learners to interact with business people globally, one for policy makers to enforce compulsory entrepreneurship education at high school level, one for educators to make use of experimental learning for entrepreneurship education and one for future studies to investigate the influence of family business on learner entrepreneurship intention.

Key terms: Entrepreneur, Entrepreneurship Education, Knowledge, Skills, Attitude, Behaviour, Intention, Competencies, Learners.

TABLE OF CONTENTS

CHAPTER 2

CONCEPTUALISATION OF ENTREPRENEURSHIP EDUCATION AND THE INFLUENCE ON ENTREPRENEURSHIP INTENTION

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

CHAPTER 4

DATA ANALYSIS, FINDINGS AND INTERPRETATION

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

EACEA	Education, Audiovisual and Culture Executive Agency
EDU	Education
EMS	Economic Management and Science
ESP	Entrepreneurial Skills Pass
FNB	First National Bank
GBSN	Global Business School Network
NCERT	National Council of Educational Research and Training
ILO	International Labour Organisation
INTENT	Intention
KMO	Kaiser-Meyer-Olkin
MTEE	Measurement Tool for Entrepreneurship Education
N/A	Not applicable
NYDA	National Youth Development Agency
SA	South Africa
SD	Standard Deviation
SME	Small and Medium Enterprise
SMME	Small, Medium and Micro Enterprise
StatsSA	Statistics South Africa
TEA	Total Early Entrepreneurial Activity
TVET	Technical and Vocational Education and Training
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 BACKGROUND OF THE STUDY

The world population is 7.7 billion and 42% constitute of people below the age of 25 years (United Nations, 2019). Youth globally account for almost 50% of the population (Jakubczak, 2015), in Africa this number stands at 65% (United Nations, 2019). Worldwide, the youth population is growing at a quicker rate as compared to the jobs that the economy can create (United Nations, 2017). As such, youth unemployment continues to be a problem globally (International Labour Organisation, 2017). Youth only constitute 25% of the working population, with the youth global unemployment rate standing at 55.2% (International Labour Organisation, 2019). In Sub-Saharan Africa the youth unemployment rate stands at 42% and in South Africa the number stands at 54.8% (Statistics South Africa, 2019). In a South African context youth is defined as persons between the ages of 14 and 35 years of age (Statistics South Africa, 2018). Gauteng, a province in South Africa, accounts for 28.9% of youth unemployment, and in the City of Tshwane the number stands at 28% (Statistics South Africa, 2019). These statistics underpins the challenges of youth unemployment, specifically in South Africa.

Entrepreneurship has been cited as a key factor to improve economic growth and facilitate more job opportunities for young people in developing countries (Drnovsˇek, Wincent, & Cardon, 2009). Chowdhury (2007) defines entrepreneurship as a complex process that calls for drive, creativity, and persistence in the development of business. It is estimated that 310 million jobs are required worldwide and 50% of these jobs can be created through entrepreneurship (Ács, Szerb & Lloyd, 2018). The increase in youth entrepreneurship in countries creates a conducive environment for the integration of youth into the labour market (Green, 2013). South Africa generally regards entrepreneurship as a panacea to youth unemployment resulting in economic growth (Fatoki & Chindoga, 2011). Furthermore, youth entrepreneurship has been identified as one of the key pillars to economic growth and job creation in South Africa (National Youth Development Agency, 2015). This is evident through the development of the National Youth Economic Empowerment Strategy and Implementation Framework by the Department of Trade and Industry (Gwija, Eresia-Eke & Iwu, 2014). In addition, Small Enterprise Finance Agency (Sefa) a state-owned company (SOC) has over a period of five

years distributed funding to Small, Medium and Micro Enterprises (SMMEs) and Co-operatives, and contributed R943 million to young entrepreneurs and R1,7 billion to women entrepreneurs (Sefa, 2018).

Despite the interventions from government, it is concerning that the total entrepreneurship activity (TEA) across the Sub-Saharan African region remains low (Fatoki & Chindoga, 2011). Carvalho (2015:547) defines TEA as the rate of individuals in the working age population who are actively involved in business start-ups, either in the phase of starting a new business, or owner-manager of new business. The average Sub-Saharan regional TEA was 26% in 2014 (Herrington, Kew & Mwanga, 2017). South Africa's early-stage TEA for 2017 is still low at 11% which is a slight increase from 6.9% in 2016 (Bosma & Kelley, 2019). The shortage of funds, management experience, entrepreneurship skills and knowledge, as well as awareness about changes in the business world in general, are cited as the main factors discouraging youth participation in entrepreneurship activities (Mahmoud, Muharam & Mas'ud, 2015). According to Global Business School Network (2013), poor education can reduce the employability of people, or weaken their entrepreneurship abilities.

There seems to be adequate research done to identify the worsening trend of youth unemployment as well as identifying entrepreneurship education as a possible solution for this problem (Chimucheka, 2014; Radipere, 2012; Fatoki & Chindoga, 2011; Autio, 2007; Chowdhury, 2007). Research done in the Netherlands, Lithuania and Finland on the effectiveness of entrepreneurship education underpins the importance of entrepreneurship education (EACEA, 2016). Educational system is cited as the most influencing factor for creating human abilities, knowledge, states of mind, values and stimulation of innovativeness (Global Business School Network, 2013). Kumar and Ahmad (2007:3) defined education as the theory and routine of teaching, or information about getting ready in a subject. Individuals have practices, attributes and abilities which can be created through learning, and this is the place for entrepreneurship education (Radipere, 2012). Entrepreneurship education is regarded as a potential catalyst for curbing unemployment, especially among the youth population (Chowdhury, 2007; Fatoki & Chindoga, 2011; Radipere, 2012). It stimulates entrepreneurship activity (Pretorius, 2008), enabling people to identify opportunities and start new business ventures (Eurochambres, 2015). There seems, however, to be very little research conducted to

determine the effectiveness of entrepreneurship education in South Africa (Chimucheka, 2014) and thus the need for further research in this regard.

1.2 PROBLEM STATEMENT

Despite the introduction of entrepreneurship education in 2005 in South African high schools, the TEA is still low at 11% (Horn, 2006; Bosma & Kelley, 2019). The South African TEA continues to be worst in the Sub-Saharan region with 11% and 26% respectively. Furthermore, the inclusion of entrepreneurship as part of the curriculum in secondary schools has seen a considerably lack of practical experience as main focus is on tests and written examinations (Nchu, Tengeh & Hassan, 2015). According to Debyser (2013:2) entrepreneurship education is vital for changing and igniting entrepreneurship culture and mind-sets at an early age. Furthermore, entrepreneurship education ranks high on policy agendas in many countries South Africa included (Chimucheka, 2014; Radipere, 2012; Fatoki & Chindoga, 2011; Autio, 2007; Chowdhury, 2007).

Little research is available to assess the effectiveness of entrepreneurship education (Chimucheka, 2014). The effects emanating from entrepreneurship education are also still poorly understood, despite the wide promotion of entrepreneurship education (Nchu, Tengeh & Hassan 2015). Furthermore, there are still doubts on whether entrepreneurship education affects SMME performance, or contributes significantly to SMME success (Solomon, 2004). More specifically, the problem being researched is the effectiveness of entrepreneurship education in South African high school learners and its impact on the adoption of entrepreneurship careers.

1.3 RESEARCH OBJECTIVES

The primary objective of this study is to assess the effectiveness of entrepreneurship education in high school learners in the City of Tshwane, South Africa.

The secondary objectives of this study are to:

1. determine whether theoretical entrepreneurship education and experiential learning in high schools has an influence on the learners' intention towards entrepreneurship careers.
2. determine whether theoretical entrepreneurship education and experiential learning in high schools has an influence on the development of entrepreneurship knowledge and skills.

1.4 HYPOTHESIS

Hypothesis 1: The theoretical entrepreneurship education (H_{1a}) and experiential learning (H_{1b}) (H_{1b}) in high schools has an influence on the development of entrepreneurship knowledge.

Hypothesis 2: The theoretical entrepreneurship education (H_{2a}) and experiential learning (H_{2b}) in high schools has an influence on the development of entrepreneurship skills.

Hypothesis 3: The theoretical entrepreneurship education (H_{3a}) and experiential learning (H_{3b}) in high schools has an influence on the learners' intention towards entrepreneurship careers.

1.5 SIGNIFICANCE OF THE STUDY

There are numerous initiatives to enhance entrepreneurship education in high schools, however the statistics remain low in terms of youth entrepreneurship adoption (Mahadea, Ramroop and Zewotir, 2011; Chimucheka, 2014 and FNB, 2016). This study aims to assess the effectiveness of the current entrepreneurship education in South African high schools. The research findings enhanced entrepreneurship education by highlighting weaknesses and gaps in how entrepreneurship education is currently offered in South African high schools, thereby contributing to South Africa's overall vision of promoting effective entrepreneurship education and training.

With entrepreneurship education being introduced in South Africa in 2005 as indicated in Chapter 1, Section 1.7.3, little attention has been given to the assessment of entrepreneurship education's effectiveness (Chimucheka, 2014). Furthermore, the study assesses the correlation between theoretical entrepreneurship education and experiential learning with entrepreneurship knowledge, skills and intention. This triggers the assessment of learner behaviour and link to the theory of planned behaviour. Therefore, based on the research findings, the study hopes to provide a recommendation for education policy makers that will see a continuous improvement in entrepreneurship education curriculum in high school.

The study further provides the assessment of theoretical entrepreneurship education and experiential learning with entrepreneurship knowledge and skills, highlighting the effectiveness theoretical entrepreneurship education and experiential learning to the development of knowledge and skills in learners. The finding hopes to raise awareness to the

educators on the importance of experiential learning in the development of learners' entrepreneurship knowledge and skills.

In addition, the study assesses the effectiveness of theoretical entrepreneurship education and experiential learning on entrepreneurship intention, which lead to the assessment of learners' entrepreneurship behaviour. The finding in this case perceives an improved policy to support entrepreneurship, through which education system working along with Government, academics and practitioners focusing on the introduction of a transformational shift in South Africa's entrepreneurship infrastructure over the short, medium and long terms.

1.6 LIMITATIONS

Due to the nature of the study and the research objectives, the study was limited to three high schools in the City of Tshwane, Gauteng province which is one geographical area. There will be a need to conduct further research across different educational levels, a larger sample size of leaners and geographical regions before any generalisations can be drawn.

1.7 LITERATURE REVIEW

Countries with mature entrepreneurship education are characterised by the existence of a national core curriculum for entrepreneurship education that starts from primary education and continues all the way to tertiary level (EACEA, 2016). However, South Africa is one of the countries still reflecting different views with regard to the guidelines on entrepreneurship education, however there are no institutional or national guidelines (FNB, 2016). Entrepreneurship is widely regarded as an important generator of economic development and innovation (Drnovsˇek, Wincent, & Cardon, 2009). Entrepreneurship education on the other hand, seeks to impart knowledge and skills to blossoming entrepreneurs (Radipere, 2012). However, entrepreneurship education is not just about academic teaching, but also about driving, supporting and being directly involved in practical support of entrepreneurs to ensure the successful development of their businesses (Charney & Libecap, 2000). Furthermore, entrepreneurship education is not just a process of developing individual businesses but developing individuals who potentially own and run businesses and, who may work in these businesses (Collett & Gale, 2012). Entrepreneurship education can stimulate entrepreneurship competencies which are critical in creating value for the development entrepreneurship (Moberg, Vestergaard, Redford, Cooney, Singer, Sailer, Filip & Fayolle. 2014).

1.7.1 Competencies associated with entrepreneurship education

Lackeus (2015) defines entrepreneurship competencies as knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of creating new value. The kind of competencies that entrepreneurship education focuses on, are as valuable to those seeking employment within existing organisations, as they are to those seeking to start their own business (Bailey, 2007). Acquiring and developing entrepreneurship competencies is more important than the direct provisioning of financial resources and consulting support that may be needed by entrepreneurs (Chimucheka, 2014). Researchers (Moreno & Casillas, 2008; Consortium for Entrepreneurship Education, 2013) have developed competency models that include personal effectiveness and workplace competencies.

According to the Entrepreneurship Education model, competencies consist of more than just a single characteristic. They consist of a group of attributes such as personal effectiveness, academic, workplace, industry wide and industry-sector technical competencies, where some of the attributes are applicable to entrepreneurs, while others are occupation or industry specific. The universal competencies occupy the bottom portion of the pyramid and are defined as the extent to which an individual has satisfactorily met the task requirements for their job and the application of knowledge, skills, attitudes, values, and behaviours in the workplace respectively (Consortium for Entrepreneurship Education, 2013).

Entrepreneurship education aims to improve and augment general competencies through its innate capacity to foster individuals to have a greater intention to start a business or become self-employed (Lackeus, 2015; Sánchez, 2013:5). It is frequently seen as a response to the increasingly globalised, uncertain and complex world, requiring all people and organisations in society to be increasingly equipped with entrepreneurship competencies (Gibb, 2002).

1.7.2 Global state of entrepreneurship education

The advocacy for the development of entrepreneurship skills by UNESCO World Conference in 1998, clarified the importance of entrepreneurship education as part of the global sphere (Greene, Brush, Eisenman, Neck & Perkins, 2016*)*. Countries have different backgrounds and histories in entrepreneurship education (Carvalho, 2015; EACEA, 2012; Fuchs, Werner & Wallau, 2008). One country may have been developing the theme for more than 20 years and another country may just be aiming to start understanding the concept (Valerio, Parton & Robb.

2014). In Germany, for example, entrepreneurship education is a cross curricular objective, offered across lower secondary education, but only included in optional subjects in upper secondary education (Fuchs, Werner & Wallau, 2008).

Entrepreneurship education in the Netherlands is usually taught as part of social sciences, which may include history, geography, government and politics or civics education as well as other related areas such as community studies (Oosterbeek, van Praag, & Ijsselstein, 2010). However, social science subjects are still the locus of entrepreneurship education in many countries, with a majority of them offering it as a compulsory subject (EACEA, 2016).

In countries, such as the Netherlands, entrepreneurship education is not explicitly mentioned as being part of the official curriculum, schools can apply for a subsidy to develop their own entrepreneurship programme or lessons (Lackerus, 2015). According to EACEA (2012), there is scope to develop specific entrepreneurship classes in Finland. Entrepreneurship education in Lithuania and Romania is set as a compulsory subject, while in Bulgaria, it is only compulsory for students choosing the technology subjects. Denmark and Spain include entrepreneurship education as an optional subject (Hatak & Reiner, 2012).

The broad approach by European countries to entrepreneurship is advantageous as entrepreneurship education gives learners the attitudes, knowledge and skills to act in an entrepreneurship way (Lackeus, 2015). Three different concepts as part of the approach to entrepreneurship education are practiced in the European countries and those concepts are cross-curricular integration into existing subjects and introduction of a separate curriculum subject (EACEA, 2016). The concept gives a broader dimension that breaks down various categories for a range of specific learning outcomes (European Commission, 2011). However, the concept is still under development and widely discussed, considerably more so in the regions of transversal competences such as entrepreneurship (EACEA, 2012).

African colleges and universities on the other hand, have already adopted a course in either entrepreneurship or small business management (Nicolaides, 2011). Examples include Small Business Management or SME management course of the University of Ghana, University of Nairobi, and Entrepreneurship at the University of Swaziland (Bawuah, Buame and Hinson,

2006). South Africa's involvement in entrepreneurship programmes started in the early 1990s, and noticeable progress has since been achieved (Chimucheka, 2014).

1.7.3 State of entrepreneurship education in South Africa

Entrepreneurship education in South Africa was formally introduced into the curriculum in 2005 for Grades 10, 11 and 12 as part of an optional subject (Horn, 2006). This was as a result of a proposal by the Department of Education that entrepreneurship should form part of the compulsory subject for Economic Management Science (EMS). The fact that the revised national high school curriculum now includes topics that cover entrepreneurship and self-employment is extremely positive and a step in the right direction towards attitudes to entrepreneurship development and building a culture of entrepreneurship in South Africa (Mahadea, Ramroop & Zewotir, 2011). The year 2008 saw the first Grade 12 learners matriculating with a formal entrepreneurship education qualification (Nicolaides, 2011).

Despite entrepreneurship being included as part of the curriculum in secondary schools, there is still a considerable lack of practical experience (Nchu, Tengeh & Hassan, 2015). Entrepreneurship assessment still focuses mainly on tests and written examinations (Brown, 2012) which lack practical application and practice. Preliminary evidence suggests that, as much as entrepreneurship education in South Africa was introduced over a decade ago, widespread problems are experienced with the implementation and adoption of entrepreneurship education into the education system (Nchu, Tengeh & Hassan, 2015). Pre-1994, South Africa provided higher education offerings which served the needs of industry well, in that they made available a workforce that encourages the culture of working for others (Nicolaides, 2011). One of the difficulties of the current South African education framework is the low quality of entrepreneurship aptitude preparations at schools (FNB, 2016). Entrepreneurship education at school level is not yet a priority in the South African education framework (Isaacs, Visser, Friedrich & Brijlal, 2007). Many individuals in South Africa believe that obtaining a job in the government sector is a preferred career option because of job security *(*Mahadea, Ramroop & Zewotir, 2011).

1.7.4 The perceptions on entrepreneurship education at high school level

The development of leadership, communication, business literacy and intrapreneurial skills is essential to empower aspiring entrepreneurs (Duval-Couetil & Long, 2014). This is necessary

as starting a business does not come as an immediate goal for many learners. Entrepreneurship education appears to encourage learners to take on entrepreneurship as a career and gives them skills needed, such as how to prepare a business plan (Mahadea et al., 2011). An overwhelming majority of the learners view the knowledge and skills gained from the entrepreneurship classes as adequate to inspire them to start up a business (Nchu, et al., 2015). However, there is a lack of consensus in defining the knowledge domain of entrepreneurship or how it ought to be taught, ranging from skills and competencies that learners should acquire to the development of an entrepreneurship mindset which will enable them to identify opportunities and be more proactive (Haynie, Shepherd, Mosakowski, & Earley, 2010; Greene, et al., 2016).

A broad array of measures for entrepreneurship education has been proposed, ranging from learner awareness and interest, to skills and knowledge, entrepreneurship intention, venture creation innovation, growth and development of entrepreneurship, and community impact (Fatoki & Oni, 2014; Fayolle, Gailly & Lassas-Clerc, 2006; Pittaway, Hannon & Thompson, 2009). The measure of the learner's understanding of the techniques and concepts set forth in the entrepreneurship education programmes are provided by the evaluation of those programmes (Nchu, et al., 2015). Emphasis on evaluation of entrepreneurship education programmes has been growing in recent years (Syden & Gordon, 2014**).** Lekoko, Rankhumise and Ras (2012) identified assessing students' interest, awareness, and intentions as a way of evaluation. However, there has been relative scarcity of robust evaluation data on which to make a compelling case for funding and supporting such programmes (OECD, 2009).

A more rigorous approach to monitoring, evaluation, and impact assessment is the cornerstone of entrepreneurship education programmes (Syden & Gordon, 2014). Moreover, the ability of entrepreneurship education programmes to elicit positive outcomes will be highly dependent on the quality and appropriateness of the programme delivered (OECD, 2009). Despite numerous entrepreneurship education programmes that are aimed at developing entrepreneurship in learners in South Africa, tangible results are yet to materialise (Chimucheka, 2014). Further research is required to critically analyse the effectiveness of entrepreneurship education in South African high schools.

1.8 RESEARCH DESIGN AND METHODOLOGY

There are numerous approaches to research based on the nature, aims and objectives of the study. When conducting research, there is a choice of utilising a quantitative, qualitative or a mixed method. According to Bryman and Bell (2007), researchers are interested in getting reliable observations that can help them understand a phenomenon. Consequently, a specific research methodology is chosen on the basis of suitability to answer the research questions.

1.8.1 Research methodology

Research methodology refers to methods for getting, sorting out and analysing data (Polit & Hungler, 2004:233). It is seen as an approach to efficiently solving the research problem, which includes the various steps that are considered by a researcher in exploring the research problem as well as the rationale behind them (Kothari, 2004:7). Research methodology incorporates the layout, setting, sample, methodological limitations, and the data collection and analysis techniques in a study (Burns & Grove, 2003:488).

1.8.2 Research design

A quantitative descriptive approach was chosen for this study. When using descriptive methodology, a researcher seeks to examine and understand individuals and their behaviours and experiences (Creswell, 2014). A quantitative descriptive methodology requires a researcher to describe a phenomenon and its characteristics, focusing on the correlation between variables or constructs found in the hypothesis (Creswell, 2015). Leedy and Ormrod (2015) explain that the descriptive research design includes, amongst others, a correlation study which aims to examine the association between two or more variables. In this study, the variables of interest were related to entrepreneurship education, entrepreneurship intention and experiential learning and skills.

1.8.3 Population

The world accommodates billions of people and not all people can be used in order to get to a conclusive population for research. Population is referred to as the group of components or cases, regardless of whether people, articles, or occasions, that fit in with particular criteria; this group is also alluded to as the target population (Mayring, 2007). The targeted population for this study consisted of all grade 12 learners in the townships of the City of Tshwane. The

focus was only on learners with entrepreneurship education as part of their syllabus. The sample was extracted from the three townships of Tshwane, namely, Mamelodi, Atteridgeville and Soshanguve. These three townships are considered the biggest in the City of Tshwane (Mbuisa, 2016).

Although the exact population of grade 12 learners in Gauteng was not known, over the past two years the average population for grade 12 learners was 96 077 while learners with business studies was 43 084 (Department of Education, 2018). The mathematical probability has proven that the size of the population is immaterial except when the size of the sample exceeds by a smaller margin the total population intended for examination (Leedy & Ormrod (2015). hence, the survey system ignores the population size when it is large or unknown. Therefore, for the population of more than 5000, a sample size of 400 is adequate (Leedy & Ormrod (2015).

1.9 SAMPLING

The population needs to be sampled in order to get the right targeted population for the research (Coldwell & Herbst, 2004). Phrasisombath (2009) describes sampling as a method, where a fraction of the data is taken from a large collection of data, and the inference drawn from the sample is generalised to the entire group.

1.9.1 Sampling strategy

A non-probability sampling method was selected for this study in order to identify the most suitable sample of the population to respond to the research question. Judgemental purposive sampling was employed to select the study participants. Saunders, Lewis and Thornhill (2009), define judgemental purposive sampling as non-probability sampling strategy which allows the researcher to select the study participants based on the subjective judgment of the researcher, while potential participants can express their wish to participate in the study. Judgemental purposive sampling is a non-probability sampling technique used to select the sample based on knowledge, experience and whether participants are a better fit for the study (Valliant, Dorfman, & Royall, 2000). The sample of the study was high school learners from the three townships of Tshwane, namely, Mamelodi, Atteridgeville and Soshanguve in the City of Tshwane, South Africa. The study only focused on grade 12 participants at high school level.

1.9.2 Sampling size

The actual population for the grade 12 learners with entrepreneurship education as part of their syllabus was 40 learners per school (Department of Education, 2018), from the 15 schools. Therefore, the targeted population size was 600 learners (15 schools x 40 learners). Solvin's formula {$n = N / (1 + Ne^2)$} was used to calculate the sample size for the study where n = number of samples, N = total population and e = error tolerance (level) (Ariola, 2006). Given the population size of 600 learners with confidence interval of 95%. Using Slovin's formula, the estimated sample size was 240. The response rate was 57% taken from total respondents of 137 with a sample size of 240. This sample was adequate to conduct both descriptive and inferential analysis of the dataset. The following is the list of schools that formed part of the sample.

List of High Schools

Mamelodi Schools: High Schools

1. Mamelodi Secondary School
2. Lompec Secondary School
3. Tsako-thabo Secondary School
4. Vlakfontein Secondary School
5. Modiri Technical School
6. J Kekana Secondary School
7. M L Msezane Middle School

Atteridgeville Schools: High Schools

1. Phelindaba Secondary School
2. Dr WF Nkomo Secondary School
3. Holy Trinity High School (Catholic Sec)
4. David Hellen Peta Secondary School
5. Hofmeyr Secondary School

Soshanguve Schools: High Schools

1. Soshanguve Technical Secondary School
2. Hlomphanang Secondary School
3. Wallmansthal Secondary

1.10 RESEARCH INSTRUMENT

Questionnaires are undoubtedly one of the primary sources of obtaining data in any research endeavour (Blaxter, Hughes, & Tight, 2006). However, the researcher should ensure that validity, reliability and unambiguity are considered when designing a questionnaire (Richards & Schmidt, 2002). A questionnaire with Likert-scale type of questions was selected as the data collection instrument for the study. Data for the research was collected through questionnaires administered to a group of grade 12 learners with entrepreneurship education as part of their syllabus.

1.10.1 Questionnaires

Questionnaires are one of the primary sources of collecting data in any research endeavour (Ajayi, 2017). However, when designing a questionnaire, the researcher should ensure that questionnaires are valid, reliable and unambiguous (Richards & Schmidt, 2002). A questionnaire was used in this study as a method of collecting data. Hungler and Polit (1995:466) define questionnaires as a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings.

1.11 RELIABILITY AND VALIDITY

Validity and reliability are central to a competent and effective study, and they are characterised with psychometric properties (Creswell, 2014). Reliability measures the consistency and steadiness of a measurement instrument, while validity tests for honesty, precision, credibility, validity and soundness of an instrument (Salkind, 2012). This study tested for reliability using Cronbach Alpha coefficient, where the acceptable level of reliability was 0.7 and higher. Validity of the study was conducted using Principal Component Analyses (PCA) with Varimax Rotation, where values close to 1.0 indicate that a factor analysis may be useful with the data, while value is less than 0.50 indicate the results of the factor analysis won't be very useful.

1.11.1 Validity

Validity deals with the belief, certainty, credibility and whether research is evaluating what it is supposed to evaluate (Fraenkel & Wallen, 2003). Thus, it is imperative that the data and the instruments used are validated. Content validity was utilised for this study. Content validity is related to a type of validity in which different elements, skills and behaviours are satisfactorily and effectively measured (Zohrabi, 2003). Validity for this study was ensured through carrying

out a pilot study in ensuring that questionnaires are measuring what they are supposed to measure. At the data analysis phase, construct validity was conducted using Principal Component Analyses (PCA) with Varimax Rotation. This tested the suitability of the PCA, Kaiser-Meyer-Olkin (KMO) and Bartlett's test. The Kaiser-Meyer-Olkin measures sampling suitability for each variable, indicating the proportion of variance in variables (Hill, 2011). The lower the proportion, the more appropriate data is to factor analysis i.e. values close to 1.0 indicate that a factor analysis may be useful with the data, while values less than 0.50 indicate the results of the factor analysis won't be very useful (Taherdoost, Sahibuddin & Jalaliyoon, 2014). Factor analysis is a statistical method used to reduce data in frequent variables into just limited variables (Hill, 2011) it describes inconsistency among observed, interrelated variables in terms of a potentially lesser number of unnoticed variables called factors. Bartlett's test of sphericity is a statistical test for the existence of correlations between variables (Swisher, Beckstead & Bebeau, 2004). As such for factor analysis to work, there should be some relationships amongst variables (Taherdoost, Sahibuddin & Jalaliyoon, 2014). Hence, a substantial Bartlett's test of sphericity is required, roughly $p<.005$.

1.11.2 Reliability

The reliability of the data and findings is one of the key requirements in any research process. Reliability deals with the consistency, dependability and replicability of the results obtained from a piece of research (Trochim, 2009). Internal reliability was utilised for this study. Internal reliability deals with the consistency of collecting, analysing and interpreting the data (Zohrabi, 2003). In utilising internal reliability, the researcher ensured that the findings obtained from an independent researcher comes out closer or similar as the original researcher after reanalysing the same information (Golafshani, 2003). This study therefore tested for reliability using Cronbach Alpha coefficient. The acceptable level of reliability was 0.7 and higher, as proposed by George and Mallery (2003).

1.12 DATA COLLECTION

The purpose of data collection in a quantitative research is to provide evidence of the experience it is investigating (Creswell, 2015). Data collection was done by means of a questionnaire. Questionnaires were distributed to the grade 12 learners and collected three days later with the help of the teachers. Permission to conduct the research at the schools was requested from the school governing bodies, parents, school principals, learners and the

Department of Education. The participants were given three days to complete and return the questionnaires. Once the questionnaires were received back, the researcher then entered data preparation process.

During this process, data was taken to editing where error detection, omissions and possible corrections were done in order to certify that minimum data quality standards had been achieved (Bonnon. 2013). Thereafter coding took place, involving the assignment of numbers and other symbols to answers ensuring that responses are grouped into a limited number of classes and categories of data. Classification and categorisation of data reduced several thousand replies to a few categories containing the critical information needed for analysis (Bonnon. 2013). After coding questionnaires appropriately, data was taken into the data entry process, where manual data entry, file creation, storage and verification of data took place. Finally, data was taken into a data cleaning process where consistency checks were done as well as the treatment of responses to ensure that data was ready for analysis.

1.13 DATA ANALYSIS AND INTERPRETATION

Data analysis is the process of bringing order, structure and meaning to the mass of collected data (Combs & Onwuegbuzie, 2010). The analysis, irrespective of which research method was used, may describe and summarise the data, identify relationships between variables, compare variables and forecast outcomes (Creswell, 2010). This study analysed data using descriptive and inferential statistics. Descriptive analysis was used to understand the characteristics of participants using frequency and percentage frequency. Descriptive statistics were also used to analyse the central tendency and the spread of all the variables of entrepreneurship education and entrepreneurship intention (Levin, Fox & Forde, 2010). The central tendency, means and medians were evaluated, while skewness and kurtosis were used to evaluate standard deviation. The inferential statistics that were used to test the hypotheses (Weinberg & Abramowitz, 2008). Pearson correlation was used to test the significance, direction and strength of the relationship between the constructs of entrepreneurship education and entrepreneurship intention (Levin, Fox & Forde, 2010).

1.14 ETHICAL CONSIDERATIONS

Permission was obtained from School Headmasters and all participants' (learners) parents to conduct the study. All participants were informed of the purpose and requirements of the study,

and they were handed a consent form before the study was conducted to ensure confidentiality of the results.

This research abided by six (6) basic ethical considerations:

- **Informed consent**. Necessary permission was received from the respondents after they had been well informed about the purpose of the study.
- **Confidentiality and anonymity**. Respondents were informed of the confidentiality and anonymity of the study before completing the questionnaires – that their personal information would not be revealed in the research report and that the study was voluntary and under no circumstance should they feel either forced or obliged to complete the questionnaire.
- **Right of privacy**. Respondents were assured of their privacy.
- **Protection from harm**. Protection against harm occurring to participants, both of a physical and psychological nature, was assured.
- **Involvement of the researcher**. The researcher guarded against manipulating or treating respondents as objects or numbers rather than as individual human beings.
- **The right of withdrawal from participation**: They were also informed that they are free to withdraw from participation at any time without any negative consequences.

All the respondents were informed from the beginning that there would not be any incentives or financial reward offered to them. The university's board of research ethics was requested for its approval of the research.

1.15 OUTLINE OF THE STUDY

The following is a summary of the structure of this study.

Chapter 1 is an introduction the research topic, research questions, importance of the research, and scope of the study.

Chapter 2 provides the literature review representing both the theoretical framework on entrepreneurship and a critical review of the existing literature on entrepreneurship education.

Chapter 3 discusses the research design and methodology used in the study.

Chapter 4 presents the findings, where the descriptive and inferential statistics are conducted to investigate the objective by testing the hypothesis from the conceptual model.

Chapter 5 discusses the findings of the study and compares and contrasts them with the literature review from Chapter 2.

Chapter 6 provides the concluding remarks of the study and gives a recommendation of entrepreneurship education for the youth of the City of Tshwane.

CHAPTER 2

CONCEPTUALISATION OF ENTREPRENEURSHIP EDUCATION AND THE INFLUENCE ON ENTREPRENEURSHIP INTENTION

2.1 INTRODUCTION

The objective of this chapter is to provide a critical review of literature on similar studies to help address the study objective which is to assess the effectiveness of entrepreneurship education among high school learners. This chapter presents the definition of entrepreneurship as the tendency of mixed passions for creating, innovating and the drive for self-employment and receiving the resultant rewards of a monetary nature and personal satisfaction (Pramono & Susanty, 2015).

The sections in this literature review include the following, a definition of entrepreneurship education, knowledge and skills; the influence of entrepreneurship education on attitude and behaviour; entrepreneurship knowledge and skills and how they are developed; competencies associated with entrepreneurship education; entrepreneurship intention. The influence of personal factors, entrepreneurship education, knowledge and skills and choice of school subject on entrepreneurship intention are also presented. Lastly, the influence of entrepreneurship education on entrepreneurship intention are discussed.

2.2 DEFINITION OF ENTREPRENEURSHIP EDUCATION, KNOWLEDGE AND SKILLS

Entrepreneurship education is viewed as a means of developing entrepreneurship knowledge, skills and attitudes in learners (Henry, Hill & Leitch, 2005; Hytti, Stenholm & Heinonen, 2010; McKenzie & Woodruff, 2012). Entrepreneurship education is further classified under two distinct categories which are entrepreneurship training programmes and academic entrepreneurship education programmes (Valerio, Parton, & Robb, 2014).

Entrepreneurship training programmes build knowledge and skills in preparation for starting a business (European Commission, 2012). The programmes on entrepreneurship training are mostly practical, targeting potential entrepreneurs and entrepreneurs who already run their own businesses. Academic entrepreneurship programmes, on the other hand, are generally activities beyond the normal classroom teaching, where learners linked through a research centre, use knowledge extracted from their research to set up business ventures (Miranda, Chamorro-

Mera, & Rubio 2017). Academic entrepreneurship programmes are further characterised as a process of transforming knowledge, technology and its commercialisation into real commercial ventures (Lewandowski, 2013). These programmes are mostly theoretical, concentrating on the construction of knowledge and skills for entrepreneurship, and they are normally targeted at high school and tertiary students (European Commission, 2014). Theoretical education is defined as a set of ideas that are intended to explain how certain factors may influence future events (Lunetta, Hofstein & Clough, 2007). Theoretical education explains what is not noticeable through observation or thoughts. Theoretical entrepreneurship education is a set of experiential overviews about the world, economy, and how entrepreneurs should behave to allow for the forecast of true outcomes (Corbett, 2005). Entrepreneurship theory does not have origin characteristic in entrepreneurship, yet entrepreneurship theory helps to understand how to create wealth (Bae, Qian, Miao & Fiet, 2014). For instance, entrepreneurship theory helps understand why some entrepreneurs are able to identify an economically worthwhile opportunity that others (Martin, McNally & Kay, 2013). Therefore, theoretical teaching for aspiring entrepreneurs is critical, because nothing is more real for them than understanding the significances of committing resources to starting a business (Bae, Qian, Miao & Fiet, 2014). However, teaching of theory in entrepreneurship should positioned teachers as coaches and mentors rather than presenters that delivers information from a textbook or a lesson in a boring predictable method (Shepherd, Williams & Patzelt, 2015). The teaching should involve every learner in the learning process and requires preparation for multiple class scenarios (Neck & Corbett, 2018).

Hence, entrepreneurship training and academic entrepreneurship programmes are aimed at building or constructing entrepreneurship knowledge and skills in learners (European Commission, 2012). Similarly, learners should embrace both entrepreneurship knowledge and skills, not one or the other, in order to become successful entrepreneurs (Müller, 2011).

Entrepreneurship knowledge describes the capability to identify an opportunity and act with the aim of realising and extracting value from it (Lewandowski, 2013). The acquisition of entrepreneurship knowledge builds the ability to foster innovation, reduce obstacles to innovation and train learners for entrepreneurship activities (Morales & Marquina, 2013). Entrepreneurship skills, on the other hand, are capabilities of turning an idea into action (Setiawan, 2013), when possessed can be used across people's personal and working lives.

Entrepreneurship skills are defined as basic skills essential to empower learners to start, develop, finance and succeed in starting or enhancing business (Council of the European Union, 2014). The basic skills comprise creativity, innovation, risk-taking, as well as the ability to design and manage plans to achieve objectives (Ubulom & Enyoghasim, 2012). For that reason, this study defines entrepreneurship education as the development of knowledge and skills required to foster entrepreneurship mindsets and attitudes, covering a range of aspects, such as idea generation, start-up, growth and innovation to reality (Irimie, Băleanu & Onică, 2008). For this reason, entrepreneurship education should encompass those aspects that focus on values and beliefs which play a critical role in shaping one's attitude towards entrepreneurship, thus triggering entrepreneurship behaviour (Fayolle, Gailly, & Lassas-Clerc, 2006:702; Liñán, Fernández & Romero, 2013; Utami, 2017). This gives raise to the debate around entrepreneurship education influencing learners' attitude and behaviour. Resulting in entrepreneurship attitude and behaviour (Dabale & Thomas, 2014).

2.3 THE INFLUENCE OF ENTREPRENEURSHIP EDUCATION ON ATTITUDE AND BEHAVIOUR

Entrepreneurship attitude implies having an appreciation of entrepreneurship education as an important means of developing entrepreneurship skills in a learner (Gerba, 2012). Furthermore, entrepreneurship attitudes can be measured in terms of behavioural attitude (Pulka, Rikwentishe and Ibrhain, 2014). Behavioural attitude is viewed as the readiness to react and appreciate certain objects in the environment (Efendi & Makhfudli, 2009: 103). With the learner's intention of starting a business rather than working for someone else (Von Graevenitz et al., 2010). The intention of starting a business is regarded as a planned behaviour (Wang, Lu & Millington, 2011).

2.3.1 The theory of planned behaviour

Planned behaviour is a consequence of the theory of 'Reasoned Action' which states that attitude towards the behaviour and subjective norms is as a result of behavioural intentions (Robinson, Stimpson, Huefner & Hunt, 1991:13). Central to the theory of planned behaviour is the learner's intention to accomplish a specified behaviour (Heuer & Kolvereid, 2014).

As such, the motivational aspects that influences a behaviour are assumed to be captured by intentions, and they are an indication of how willingly and how much of an effort a learner is planning to apply in performing the behaviour (Dabale & Masese, 2014). As a result, the

stronger the intention to engage in a behaviour, the more likely would be its performance. However, behavioural intention can be discovered in behaviour only if the behaviour is under volitional control (Hagerstrom, 2010). Volition control referred to as the reasoning process by which a learner chooses and oblige to a course of action (Ajzen, 2011. Therefore, the behavioural intention is expected to stimulate action to the level that a learner has behavioural control that increase performance such that a learner is motivated to try (Dabale & Masese, 2014).

Furthermore, behavioural intention is the direct precursor of behaviour (Utami, 2017
). It is determined by a learner's attitude toward executing the behaviour and the learner's perception of the subjective norm. Furthermore, behavioural intention represents learners' anticipations about a specific behaviour in a specified situation and probability to act (Von Graevenitz et al., 2010). For that reason, behavioural intentions can be defined as learner's planned future behaviour (Wang, Lu & Millington, 2011).

However, planned behaviour is not predicted by attitudes, beliefs, personality or demographics but by the intentions toward the behaviour (Fayolle & Gailly, 2015). These intentions serve to channel beliefs and perceptions into the intention to act, then to the action itself (Koe, 2016). In the schooling environment, intentions are shaped by the learners' attitudes towards behavior (Ajzen, 2011). The attitudes of learners to become future entrepreneurs is triggered by exposure to entrepreneurship education (Dabale & Thomas, 2014). A positive attitude towards entrepreneurship education, therefore, indicates that learners understand whilst viewing entrepreneurship education as an attempt to foster entrepreneurship awareness and entrepreneurship as a career option (Mapfaira & Setibi, 2014).

The definition of entrepreneurship education, entrepreneurship education is based on the identified knowledge and skills which are implemented in an educational system, resulting in improved entrepreneurship activity (Morales & Marquina 2013:129).The skills are referred to as entrepreneurship skills. However, without properly established entrepreneurship knowledge and skills, starting a business is rather futile even when there is solid intention for business start-up (Linan, 2008; Lorz, 2011). Thus, learners acquire entrepreneurship knowledge and skills in order to function effectively as entrepreneurs in the turbulent business environment

(GEM, 2015). It is critical to understand what entrepreneurship knowledge and skills are about in order to be applied properly (Chell, 2013).

2.4 ENTREPRENEURSHIP KNOWLEDGE AND SKILLS

Entrepreneurship knowledge and skills are vital in promoting innovation, competitiveness and economic growth (Chell, 2013). In addition, entrepreneurship knowledge and skills provide benefits, regardless of whether or not learners intend on starting a business (Lorz, 2011). Entrepreneurship knowledge, for instance, is classified under two distinct knowledge categories namely, identification of entrepreneurship opportunities and exploiting the identified entrepreneurship opportunities (Lewandowski, 2013). The first category of knowledge relates to learners' capacity to identify entrepreneurship opportunities (Morales & Marquina, 2013). This encompasses the discovery and assessment of new venture opportunities (Lewandowski, 2013). Identifying these opportunities means being able to identify a market or a collection of people confronted with a specific problem and solving that problem through the development of advanced or new methods (Chell, 2013). The second category of knowledge refers to effectively taking advantage of the identified opportunity (Lewandowski, 2013). In this case, an entrepreneur develops a feasible commercial model, which comprises of the creation of a profitable business from the new venture opportunity (Morales & Marquina, 2013). Equally, these categories of knowledge are anticipated of entrepreneurs (Chell, 2013).

Entrepreneurship skills, on the other hand, are associated with the capability in the process of opportunity identification and the ability to capitalise on the identified opportunities. Including a range of skills associated with creating and executing business plans to implement the business (Setiawan, 2013). Furthermore, entrepreneurship skills are viewed as crucial to advancing innovation and the entrepreneurship spirit, supporting the formation of new firms and business development (Ubulom & Enyoghasim, 2012). As a result, entrepreneurship skills also provide benefits irrespective of whether a learner decides to start a business (Setiawan, 2013). Hence, the skills are used across the learner's personal and working life as they include innovation, comprehension of risk, and sense of responsibility (Utami, 2017). Hence, when it comes to entrepreneurship knowledge and skills, it is prudent to understand whether or not entrepreneurship knowledge and skills can be taught and developed in learners (Sánchez 2011).

2.5 DEVELOPING ENTREPRENEURSHIP KNOWLEDGE AND SKILLS

There is an observable agreement amongst scholars that entrepreneurship knowledge and skills can be taught and developed in learners (Roberts, 2012; Ubulom & Enyoghasim, 2012; Morales & Marquina, 2013). Entrepreneurship knowledge is formed through the conversion of experience gained through a combination of personal and observational experiences (Millwood, 2013). In other words, learners build new knowledge and understanding from what they previously know and have confidence in (Kolb, 2005). Similarly, knowledge is formed and re-formed with experiences, thereby becoming a part of the learner´s personal knowledge (Millwood, 2013). As a result, entrepreneurship knowledge can be acquired and developed through constant exposure to entrepreneurship activities (Morales & Marquina, 2013).

Adding to the categories of entrepreneurship knowledge, as previously discussed, four types of knowledge can be developed through constant exposure to entrepreneurship activities, namely, general business, venture, opportunity specific and venture-specific knowledge; (Pramono & Susanty, 2015). Firstly, business general knowledge is applicable to both new and established business. Secondly, venture general knowledge which is distinct from business general knowledge but fairly general to ventures. Thirdly, opportunity specific knowledge which focuses on the existence of an unserved market and the resources required for venturing into the market. Then lastly, venture-specific knowledge which is specific to the creation of a particular product or service. In addition to this, the skills essential for entrepreneurs are divided into three distinct categories, namely, technical skills which include written and oral communication, technical management, and organising skills; business management skills which are administrative skills such as planning, decision making, marketing and accounting; the third and the last category is personal entrepreneurship skills which includes innovation, risk taking, and perseverance (Henry et al., 2005). These skills are transferred through effective entrepreneurship education resulting in successful entrepreneurs (Lackeus, 2013).

Furthermore, entrepreneurship skills are business skills which a learner acquires to enable them to function effectively in a business environment (Ubulom & Enyoghasim, 2012). These business skills are developed through the stages of entrepreneurship education, namely; basics, competency awareness and creative applications (Bridge, O'Neill, & Cromie, 1998; Gorman, Hanlon, & King, 1997; Setiawan, 2013)**.** The first stage of the development of business skills takes place from the early stage in primary and high school education where basic skills such

as the ability to read, write, speak, problem-solving and mathematics are taught (Brinckmann & Kim, 2015). Basic skills are those skills crucial for the learner to be able to fit into the next level of education, for instant, grade at school or a job (Chell, 2013). The second and last stage of development are competencies and creative applications which take place in higher education where competency is imparted through theory and experimental learning which results in business start-ups and growth (Ubulom & Enyoghasim, 2012). Competency, in this case, is referred to as a combination of noticeable skills, abilities and personal attributes that contribute to enhancement of a learner to act and eventually resulting in business success (Boyles, 2012).

Competency in a learner is the validation that a learner has learnt what was intended in the learning objectives and that learning is based on experiential learning (Sánchez 2011; Lafontaine & Shaw, 2014). This experiential learning is being introduced through exposing learners to situations where learners can gain numerous different experiences and develop skills for entrepreneurship (Ubulom & Enyoghasim, 2012). Experimental learning seeks to expose learners to new practices that add value to the market and streamline the economy (Martin, McNally & Kay, 2013). The skills developed through experiential learning enable learners to address changing circumstances in business, due to them being task-oriented, focusing on real business problems (Rocha, Carneiro & Varum, 2015). Therefore, this study describes experiential learning as learning by doing, which strives to bring a more action-oriented way of learning (Roberts, 2012). Against this backdrop, it is prudent that entrepreneurship skills development is associated with experimental learning (Rocha, Carneiro & Varum, 2015).

However, entrepreneurs enjoy knowledge and skills, many of which are entrenched within them (Kaplan & Warren, 2010). This is due to exposure to a range of cultures, backgrounds and experiences (Irimie, Băleanu & Onică, 2008). As a result, there are wide differences in the traits and characteristics of the entrepreneur's willingness to undertake risk, but the possession of entrepreneurship knowledge and skills are common (Kaplan & Warren, 2010:8). These entrepreneurship knowledge and skills are demonstrated as entrepreneurship competencies in the form of opportunity identification, the capacity to capitalise on identified opportunities and a variety of skills associated with building and performing to qualify such opportunities to be realised (European Commission, 2012).

Competencies are characterised as integrated abilities which a learner requires to succeed in implementing entrepreneurship activities (Boyles, 2012). There is a distinction between competencies and skills in that competencies are not only attributes of learners, but also depend on the situation and society around the learners (Wickramaratne, Kiminami & Yagi, 2014). The notion is supported by the idea that entrepreneurs can be filled with desire and great ideas, but regrettably desire and great ideas without proper entrepreneurship competencies are not sufficient to guarantee the success of a business (Boyles, 2012). This has led to the debate around the kind of competences associated with entrepreneurship education (Lackeus, 2013).

2.6 COMPETENCIES ASSOCIATED WITH ENTREPRENEURSHIP EDUCATION

In order for learners to become successful entrepreneurs, they must possess competencies which are held up as a combination of knowledge, skills and attributes (Bailey, 2007; Lackeus, 2013); these competencies are referred as entrepreneurship competencies. Entrepreneurship competencies are characterised by the combination of all the entrepreneurs' essential qualities for sustainable achievement and entrepreneurship (Moreno & Casillas, 2008). The characteristics include but are not limited to mental and behavioural tendencies, attitudes, values, beliefs, knowledge, skills, abilities and wisdom. Manifestation of entrepreneurship competencies in entrepreneurs emanates in the form of innovation, change and action essential for personal, social and work life (Mensah, 2013). Therefore, entrepreneurship competencies are imperative in the growth and success of entrepreneurs (Boyles, 2012). Furthermore, the appropriate consideration of the nature and character of entrepreneurship competencies can have substantial influence in practice (Lackeus, 2013). Hence, entrepreneurship competencies are defined as knowledge, skills and attributes that affect the willingness and ability to perform the entrepreneurship job of creating new value (Lackeus, 2015).

In recognising the importance of entrepreneurship competencies and identifying these as crucial for the development of learning opportunities, researchers have developed the competency model. The competency model is presented as a pyramid that includes personal effectiveness such as talents, strengths, skills, energy and time; workplace competencies and universal competencies (Consortium for Entrepreneurship Education ,2009; Moreno & Casillas, 2008). The competency model is a combination of competencies that define skills required for successful performance (Moreno & Casillas, 2008).

The competencies, as represented in the entrepreneurship education model, are vital to business growth and success (Thematic Working Group on Entrepreneurship Education, 2013). The awareness of the nature and role of such competencies can have important significance for the intention to start a new venture. The intention in this case, is more than acquiring experience, skills and knowledge or possessing attributes related to learning (Fayolle, & Linan, 2013). But the intention is affected by the nurturing of entrepreneurship skills critical to the development of entrepreneurship (OECD, 2011). The more favourable the attitude toward behaviour, the stronger the learner's intention to perform in an entrepreneurship behaviour (Shen, Osorio & Settles, 2017). As a result, intention is defined as the state of mind guiding and directing the actions of a learner towards the development and execution of behaviour (Owoseni & Akambi, 2010). Whereas entrepreneurship intention is defined as a mental illustration of the activities to be executed by a learner to either create a new venture or add value to the existing companies (Owoseni & Akambi, 2010).

2.7 ENTREPRENEURSHIP INTENTION

At the beginning of an organisation, the impact of entrepreneurship intention is predominant, due to circumstances around the business often being exclusive in their volatility, complexity and changing requirements during the business development (Von Graevenitz, Harhoff & Weber, 2010; Omerzel & Kušce, 2013). Entrepreneurship intention is stimulated by the development of entrepreneurship attributes, which in turn, determine the business setting (such as the form and the direction) of an emerging business during its inception (Mellor, Coulton, Chick, Bifulco, Mellor, & Fisher, 2009; Sánchez, 2013; Caliendo, Fossen & Kritikos, 2014). Moreover, entrepreneurship intention is a preceding and determinant element towards performing entrepreneurship behaviour (Fayolle & DeGeorge 2006; Koe, 2016). The existence of entrepreneurship intention is seen as a reliable predictor of entrepreneurship behaviour (Sánchez, 2013).

In summary, entrepreneurship intention is defined as the learners' readiness to engage in an entrepreneurship behaviour (Owoseni & Akambi, 2010). This behaviour is performed if a strong entrepreneurship intention to engage in entrepreneurship behaviour exists (Fayolle & Gailly, 2015). Hence, starting a business is intentional (Koe, 2016). In other words, a learner will pursue and exploit business opportunities because of entrepreneurship intention (Fossen & Kritikos, 2014).

However, entrepreneurship intention is not only an indication of future entrepreneurship behaviour but is also necessary for launching an entrepreneurship venture (Koe, 2016). A certain degree of entrepreneurship intention must first be present for a learner to carry out entrepreneurship behaviour (Oosterbeek, van Praag & Ijsselstein, 2010). The behaviour would have been triggered by firstly, personal factors, social and cultural norms which would influence a learner's decision to become an entrepreneur. These factors are largely influenced by family and friends (Von Graevenitz et al., 2010). Secondly, entrepreneurship education transfers entrepreneurship knowledge and skills which provide learners with practical experiments and prepares them for a volatile market. Lastly, the type of subject learners chooses at high education levels. For that reason, entrepreneurs must have attributes of several personalities at once to demonstrate the ability to act and develop a new venture (Ilouga, Mouloungni & Sahut, 2014).

Nonetheless, learners would contemplate a career in entrepreneurship based on their perceptions of its fitness and attractiveness (Barringer & Ireland, 2010). It is the perceptions that entrepreneurship can boost the success of personal goals, chase ideas and monetisation of those ideas (Zain, Akram & Ghani, 2010). Therefore, entrepreneurship intentions reflect the central courage, desire and a sense of from working for someone else (Barringer & Ireland, 2010). For that reason, learners' likelihood to become an entrepreneur may not find expression, unless they have intentions of becoming entrepreneurs (Liñán & Fayolle, 2015). Some of those intentions could be influenced by personal factors (Hagerstrom, 2010).

2.7.1 Influence of personal factors on entrepreneurship intention

Personal factors are factors that strongly influence the behaviour to act and help to explain why the learner behaves differently even when in an identical situation and seemingly having the same experiences (Hagerstrom, 2010; Pramono & Susanty, 2015). Personal factors differ from learner to learner, resulting in a different set of perceptions towards certain environments (Hagerstrom, 2010). For instance, a learner's answers to circumstances will depend on perceptions they have about the available alternatives (Koe, 2016). In addition, perceptions are determined by cultural and social factors which are influenced by the learner's values system (Altinay et al., 2012). Overall, circumstances would not determine entrepreneurship behaviours directly, but it is largely determined by the learner's own perception of how desirable and

feasible the available options that are presented to them (Karimi, Biemans, Lans, Chizari & Mulder, 2014). The perception is supported by conscious and unconscious experiences leading to the learners developing an intention (Liñán & Chen, 2009; Yurtkoru, Kuşcu & Doğanay, 2014).

Intention influences the effort that a learner will make to carry out that entrepreneurship behaviour (Farouk & Ikram 2014). The willingness to carry out entrepreneurship behaviours is understood as composed by the personal attitude and perceived subjective norms (Uygun & Kasimoglu, 2013). As a result, the learner's way of evaluating and comparing a situation against the available options will be based on a learner's attitudes and subjective norm towards a situation (Hoyer & Maclnis, 2004; Maes et al., 2014). Similarly, the learner's subjective norm will be influenced by perceived expectation level from those who are important to that learner, impacting learner's intentions (Yurtkoru et al., 2014). For example, the occupation of the leaner's parents helps a learner to decide whether or not they will engage in entrepreneurship behaviour (Karimi et al., 2014). Ultimately, the children of self-employed parents are more likely to have higher entrepreneurship intentions (Heuer & Kolvereid, 2014).

In addition to personal factors, demographics could also help in understanding how a person might behave in the future (Williams & Subich, 2006; Haus, Steinmetz, Isidor & Kabst, 2013; Khuong & An, 2016). Demographics entail elements such as age, gender, graduation rate and employment occupation which affects the ability of learners to be entrepreneurs (Mahmoud, Muharam & Mas'ud, 2015). Gender for instance, females and males' perception about entrepreneurship differ (Weber, 2011). Therefore, the effect of entrepreneurship education on entrepreneurship attitudes and intentions would also be different. Traditionally, entrepreneurship is considered masculine, so men tend to pursue an entrepreneurship career and will have higher intentions of starting a new venture (Watson & Hutchins, 2011). The results of the intention will be gender variance in occupation ambitions because of skills (Haus, Steinmetz, Isidor & Kabst, 2013). Thus, entrepreneurship education might be required more for females in order to increase their entrepreneurship intentions (Bae, Qian, Miao & Fiet, 2014).

The role of family and friends is also prominent in influencing the decisions of a learner to become an entrepreneur (Nanda and Sorensen, 2009). Family and friends are considered as

fund providers and role models (Farouk & Ikram 2014). The role models often provide the necessary information, knowledge, skills, guidance and support (Kirkwood 2007; Karimi et al., 2014). Similarly, role models positively diffuse their entrepreneurship knowledge and skills to learners which may critically influence one's entrepreneurship intention (Haus et al., 2013). Ultimately, the knowledge and skills accumulated from the role models will significantly influence the learner's entrepreneurship intention, resulting in entrepreneurship activities (Farouk & Ikram, 2014).

As previously discussed in Section 2.1.1., entrepreneurship knowledge and skills are obtained through entrepreneurship education programmes that are intended for the construction of learners' intention to start a new venture (Maina, 2011: 448; Müller, 2011). However, the ability of entrepreneurship education programmes to provoke positive outcomes is highly dependent on the quality and appropriateness of the programme delivered (OECD, 2009). Despite numerous entrepreneurship education programmes that are aimed at developing entrepreneurship knowledge and skills in learners in South Africa, empirical results about the influence of entrepreneurship education towards entrepreneurship intention are yet to materialise (Chimucheka, 2014).

2.7.2 Influence of entrepreneurship education, knowledge and skills on entrepreneurship intention

Entrepreneurship education entails a process of education for entrepreneurship attitudes, knowledge and skills (Hattab, 2015). The main role of entrepreneurship education is to increase learners' awareness towards entrepreneurship and to increase learners' entrepreneurship capabilities, resulting in an increase in entrepreneurship knowledge, skills and attitude (Fayolle & Gailly, 2013). The key assumption under entrepreneurship education is that entrepreneurship knowledge and skills can be taught and are not fixed personal attributes (Heuer & Kolvereid, 2014; Rocha, Carneiro & Varum, 2015). Learners can learn this knowledge and skills through effective entrepreneurship education in order to become successful entrepreneurs (Fayolle & Gailly, 2013).

Entrepreneurship education improves and develops qualities that are related to entrepreneurship and provide knowledge and skills required to start a business (Martin, McNally & Kay, 2013). Because learners' identification of entrepreneurship prospects is

dependent on the information they have already learnt (Heuer & Kolvereid, 2014). The knowledge and skills gained from entrepreneurship education programmes are aimed at stimulating learners' entrepreneurship intentions and challenging learners to establish new businesses (Rocha, Carneiro & Varum, 2015). Suggesting that entrepreneurship intention is not inherited, but established through entrepreneurship education (Wang, Lu & Millington, 2011). The notion is supported by public policy makers and government bodies around the world reinforcing entrepreneurship education through learning activities to encourage entrepreneurship intention and a more entrepreneurship society (Fayolle & Linan, 2014; Mahmoud et al., 2015).

However, the key to entrepreneurship education success depends on the contents and teaching of entrepreneurship programmes (Heuer & Kolvereid, 2014). Likewise, a variety of learning activities such as experiential learning in entrepreneurship education have been designed to encourage the formation of business ventures (Syden & Gordon, 2014). The experiential learning involves the process of knowledge creation through transformation of experience (Kolb, 2005). Furthermore, experimental learning attempt to engage learners in more active learning such presentations and handouts to video and case-study based learning with group discussion and role-plays (Lafontaine & Shaw, 2014). As such, any knowledge gained through experience is regarded as experiential learning (Mueller & Anderson, 2014). Knowledge and passion for work have a greater influence on entrepreneurial intentions (Farouk, Ikram & Sami, 2014). Therefore, experiential learning trigger entrepreneurship intentions to a greater extent (Rocha, Carneiro & Varum, 2015) Entrepreneurial intention involves inner guts, ambition and feeling to stand on one's feet (Mahmoud, Muharam & Mas'ud, 2015).

Furthermore, Experiential learning in entrepreneurship education stimulates learners' capabilities to realize socio-economic hitches as trials, propelling learners to prompt entrepreneurial actions validating the intentions for a career in entrepreneurship (Lafontaine & Shaw, 2014). The learning outcomes include the ability for learners to develop business plans and transform these into action plans, critically reflecting on business ventures, the application of creative thinking to address business problems, and the principles of professionalism and ethics (Heuer & Kolvereid, 2014; Antonites, 2015). The learning activities are obtained from education programmes at primary, secondary or tertiary level (Heuer & Kolvereid, 2014). Thus, graduating from high school with entrepreneurship education helps build learners'

confidence and improved their entrepreneurship intention (Fayolle & Linan, 2014). This is due to the importance of learning by association that incorporates experimentation in entrepreneurship (Syden & Gordon, 2014), hence, the argument about entrepreneurship intention being influenced by the type of curriculum and the learners' choice of subjects in high school level (Heuer & Kolvereid, 2014).

2.7.3 Influence of learners' choice of school subjects on entrepreneurship intention

The type of curriculum learners chose at high school is normally a decisive factor in the general career choice and entrepreneurship intentions (Fayolle & Linan, 2014; Khuong & An, 2016). This is because embedding entrepreneurship into the school curriculum has a better chance of contributing to the learners' entrepreneurship intention (Barnard, 2012). For instance, learners that take entrepreneurship subjects have a favourable attitude toward entrepreneurship and venture creation in general than learners who do not take such subjects (Wang, Lu & Millington, 2011). Similarly, the introduction of entrepreneurship as a secondary school subject has encouraged some learners to set up businesses for themselves upon graduation (Barnard, 2012). Resulting in learners studying entrepreneurship at university level to become researchers and consultants in entrepreneurship. Moreover, entrepreneurs that attended entrepreneurship courses have a high inclination to start their own business compared with those attending other courses or not attending courses (Chakraborty & Roy, 2015). Thus, positive experiences with the studies of entrepreneurship, develops a desire for learners to become entrepreneurs (Daniel, Pita, Costa and Costa, 2016).

However, some learners become entrepreneurs not because of learning entrepreneurship, but because they have found a suitable niche in the market (Pursell-Gotz, 2016). Furthermore, not all learners who study entrepreneurship become entrepreneurs, but the knowledge, skills, and abilities developed in entrepreneurship curriculum could be used in all walks of life (Mamun, Fong & Nawi, 2017). For instance, the experience will still be worthwhile for learners who decide on formal employment, since these learners will bring to companies an entrepreneurship skill set that would greatly benefit the development of those companies (Pursell-Gotz, 2016).

Learners are increasingly becoming the targets of entrepreneurship and policy initiatives and entrepreneurship education in schools (Ghina, Simatupang & Gustomo, 2014), and thus the need for effective measurement of the impact of entrepreneurship education programmes. In

general, researchers and practitioners agree that entrepreneurship education produces entrepreneurship desire with measurable outcomes (Ratten, 2014; Herrington & Kew, 2017). However, little research has been conducted to assess the influence of entrepreneurship education has on learners in high schools.

2.7.4 Assessing the influence of entrepreneurship education on entrepreneurship intention

The models of successful entrepreneurship education programmes are indefinable (Ghina, Simatupang & Gustomo, 2014). Jones and English (2004:416) define an entrepreneurship education programme as the process of providing learners and individuals with the ability to recognise commercial opportunities, the knowledge, skills and attitudes to act on them. Furthermore, entrepreneurship education programmes, as indicated by Pfeifer, Peterka and Jeger (2014), are a compound process with an extensive range of objectives such as to:

- give learners knowledge to better entrepreneurship ventures creation, management and growth,
- provide entrepreneurship awareness,
- enhance learners' attitudes and values and self-reliance to ensure entrepreneurship actions.

The third objective can be triggered through primary and secondary education (Ubulom & Enyoghasim, 2012), while the first two objectives are more likely to be influenced during tertiary education. Nevertheless, entrepreneurship education teaching and assessment methods vary, and little is known about the effective teaching techniques and assessment methods for entrepreneurship (Ghina, Simatupang & Gustomo, 2014). Yet assessment is central in the overall quality of teaching and learning in education (Lekoko, Rankhumise & Ras, 2012). It is an integral component of a coherent educational experience (Pittaway, Hannon, Gibb & Thompson, 2009:72). Therefore, well-designed assessment provides opportunities for learners to self-monitor and receive feedback (Mwasalwiba, 2010).

2.8 CONCEPTUAL MODEL OF ENTREPRENEURSHIP EDUCATION

The conceptual model is based entrepreneurship education teachings, such as experiential learning and theoretical education. Furthermore, the assessment of entrepreneurship education depends on several entrepreneurship assessment tools which includes Entre Intention, Entrepreneurship Skills Pass (ESP), Global Entrepreneurship Monitor (GEM) and

Measurement Tool for Entrepreneurship Education (MTEE) (Ramsgaard & Østergaard, 2018). The tools are briefly discussed below.

2.8.1 Global entrepreneurship monitor (GEM)

The Global Entrepreneurship Monitor is an international research commission to study entrepreneurship, entrepreneurship behaviour and entrepreneurship attitudes, assembled around the collection of primary data (Ramsgaard & Østergaard, 2018). The results are levels of entrepreneurship activity, and entrepreneurship climate in a given population (Draycott, Rae, & Vause, 2011). It offers likelihoods for international comparisons and awareness of the national situation and its effect on entrepreneurship (Draycott, Rae, & Vause, 2011).

2.8.2 Measurement tool for entrepreneurship education (MTEE)

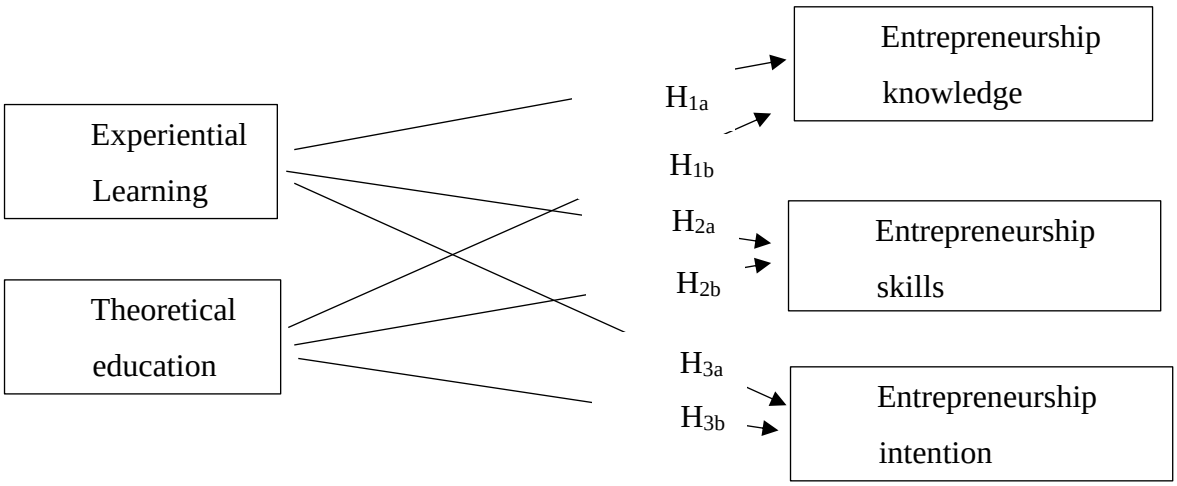
The Measurement tool for entrepreneurship education is a self-evaluation tool for teachers and educators at different education levels (Ramsgaard & Østergaard, 2018). The tool evaluates contents, modes of operation and methods of teaching. The tool provides automatic personal feedback activity via email (Ruskovaara & Pihkala, 2014). The tool has been built to guide entrepreneurship and entrepreneurship education, and support the work of teachers, educators, principals and decision-makers (Ramsgaard & Østergaard, 2018). Some of the tools are at an emerging stage, while others have already established their role in the market (Moberg, Vestergaard, Fayolle, Redford, Cooney, Singer, Sailer, & Filip, 2014**).** The variation of the tools available highlights the fact that both entrepreneurship and entrepreneurship education are very broad subjects which need to be evaluated and assessed accordingly (Ramsgaard & Østergaard, 2018). This study uses the Entre intention tool (Ramsgaard & Østergaard, 2018). The tool is selected because of its ability to measure learners' entrepreneurship intentions and attitudes towards entrepreneurship with the use of printable questionnaires (Ruskovaara & Pihkala, 2014) Entre Intention measures the effect of entrepreneurship education and develops the curriculum in support of the development of entrepreneurship learning (Ramsgaard & Østergaard, 2018). It is a web-based and printable questionnaire tool, mainly used in evaluating and identifying learners' entrepreneurship intentions, attitudes, entrepreneurship skills and characteristics (Ramsgaard & Østergaard, 2018). The results can be used in promoting learners' entrepreneurship and developing effective programmes for entrepreneurship education (Edwards & Muir, 2012). Effective entrepreneurship learning will be marked by the growth of intention, desire, interest and encouragement from the learners themselves to run a business

(Mueller & Anderson, 2014). Based on the literature above, the conceptual model of the study with its hypotheses is presented in Figure 2.1.

2.9 CONCEPTUAL MODEL AND HYPOTHESES OF THE STUDY

This model comprises of two variables namely, experiential learning and theoretical education. Both this variables correlation is tested against entrepreneurship knowledge, skills and intention. Figure 2.1 demonstrate conceptual model of this study.

Figure 2-1: Conceptual model and hypotheses of the study



Source: Researcher's own construction

Entrepreneurship education is present in South African schools from Grades10, 11 and 12 as part of an optional school subject since 2005 (Horn, 2006, Mahadea, Ramroop & Zewotir, 2011). The revised national high school curriculum includes school subjects that cover entrepreneurship and self-employment. The development of leadership, communication, business literacy and entrepreneurship skills are essential to empower aspiring entrepreneurs (Duval-Couetil & Long, 2014*).* As such, the hypothesis can be formulated as follows*:*

Hypothesis 1: The entrepreneurship theoretical education (H_{1a}) and experiential learning (H_{1b}) in high schools has an influence on the development of entrepreneurship knowledge.

Entrepreneurship education is understood as a problem-solving process centred on the acquisition, storage and use of entrepreneurship knowledge and skills in long term memory (Mueller & Anderson, 2014). Knowledge and skills can be acquired and developed through

consistent exposure to entrepreneurship activities, resulting in growing entrepreneurship intentions (Tshikovhi & Mvula, 2014). As such, the hypothesis can be developed as follows:

Hypothesis 2: The entrepreneurship theoretical education (H_{2a}) and experiential learning (H_{2b}) in high schools has an influence on the development of entrepreneurship skills.

Entrepreneurship education improves and develops qualities that are related to entrepreneurship and provide knowledge and skills required to start a business (Martin, McNally & Kay, 2013). The knowledge and skills gained from entrepreneurship education programmes are aimed at stimulating learners' entrepreneurship intentions and challenging learners to establish new businesses (Rocha, Carneiro & Varum, 2015). The result is that entrepreneurship intention is not inherited, but established through entrepreneurship education (Wang, Lu & Millington, 2011). As such, the hypothesis can be developed as follows:

Hypothesis 3: The entrepreneurship theoretical education (H_{3a}) and experiential learning (H_{3b}) in high schools has an influence on the learners' intention towards entrepreneurship careers.

Numerous tools and methods exist to measure, evaluate and assess different elements of entrepreneurship education (Draycott, Rae, & Vause, 2011). However, each tool has its ways of gathering the evidence (Ramsgaard & Østergaard, 2018). The type of data and reporting about the results are very different. The lack of publicity, visibility, accessibility and usability has seen these tools redundant in promoting entrepreneurship (Edwards & Muir, 2012). The tools include, but are not limited to Entre Intention, Entrepreneurship Skills Pass (ESP), Global Entrepreneurship Monitor (GEM) and Measurement Tool for Entrepreneurship Education (MTEE) (Ramsgaard & Østergaard, 2018).

Several studies of entrepreneurship education were conducted to enhance learners in becoming successful entrepreneurs (Weber, 2010; Wedayanti & Giantari, 2016; Utami, 2017). However, the results were often difficult to observe due to low intentions to become entrepreneurs in developing countries, including South Africa (Wedayanti & Giantari, 2016). Further research is required to critically analyse the effectiveness of entrepreneurship education in South African high schools.

2.10 SUMMARY

This chapter presented the historical views of scholars based on specific objectives of the study, specifically focusing on assessing the effectiveness of entrepreneurship education in high school learners through entrepreneurship knowledge, skills, competencies, entrepreneurship intention and the measurement of entrepreneurship education effectiveness. The next chapter presents the methodology used in this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter discusses in detail the research methodology that was adopted in this study. The study focuses on the effectiveness of the current entrepreneurship education in South African high schools. The researcher describes how data necessary to address the research objectives and questions was chosen, collected, analysed and presented. The chapter also provides the reasons and justifications for the research design, research instruments, data sources, data collection techniques, data presentation techniques and analytical techniques used in the study.

3.2 RESEARCH METHODOLOGY

When conducting research, there is a choice of utilising a quantitative, qualitative or mixed research approach (Creswell, 2014). In this study, the quantitative research approach was selected as it was effective in answering the research objective which is to assess the effectiveness of entrepreneurship education in high school learners. This approach is based on a post-positivist paradigm which views that the knowledge is developed in an objective manner with no direct interaction between the researcher and the participants. The intention of quantitative research, is to describe, interpret and predict the social phenomenon (Sarantakos, 1998). The hypotheses used in this study were then tested so as to accept or reject theory in a particular setting in a process known as deductive reasoning (Bryman, 2012). Quantitative research approach enabled the study to use numeric data to assess the effectiveness of entrepreneurship education and was capable of generalising to the population of the current study.

3.3 RESEARCH DESIGN

The research design refers to the set of methods and procedures that one chooses to collect and analyse data, ensuring effectiveness in addressing the research problem (Creswell, 2014). The research design is influenced by the available knowledge in the specific area, leading to the kind of questions that are asked (Heale & Twycross, 2015). Therefore, in order to meet the main objective of this study of assessing the effectiveness of entrepreneurship education in high school learners in the City of Tshwane, South Africa, a quantitative descriptive approach was chosen. A quantitative research is concerned with visible and quantifiable phenomena involving people, events and things with the aim of establishing the strength of the relationship

between constructs using statistical tests (Creswell, 2010). The method requires that the researcher uses a pre-constructed or pre-determine response categories with an expectation that participants' varying experiences and perspective fit into this (Bryman, 2012 :408). The method allows the researchers to gain an extensive and generalisable set of findings (Creswell, 2010). In generalising the findings to the population in question, quantitative methods use cause and effect relationships (Christensen & Johnson, 2012). The method allows the researchers to gain an extensive and generalisable set of findings. Generalisation is an act of reasoning that comprises illustration of wide extrapolations from specific observations and is widely-acknowledged as a quality standard in quantitative research (Phrasisombath, 2009).

Quantitative methods sometimes present a challenge of researcher bias and having difficulties in getting an in-depth study of the phenomena, due to the researcher's pre-determined response categories (Christensen & Johnson, 2012). Some of these challenges are eliminated by the researcher not being in direct contact with the participants, that is, collection of data through either internet, telephone or even pencil-paper questionnaire (Bryman, 2012). In this study the participants were given space to self-administer the research questionnaires to avoid researcher bias. Furthermore, with quantitative research designs the researcher has a choice of descriptive, where subjects are measured once or experimental, where subjects measured before and after a treatment (Christensen & Johnson, 2012). A descriptive design was chosen for the study.

A descriptive design was suitable for the study because of its high level of representativeness and the ease of obtaining participants' opinions (Polit & Beck 2004:50). Descriptive research is aimed at providing accurate and valid representation of the factors relevant to the research question (Creswell, 2014). Leedy and Ormrod (2015) characterise a descriptive research design as exploring possible associations between to two or more variables. In this study, the constructs to be assessed are entrepreneurship education and entrepreneurship intention.

3.4 POPULATION

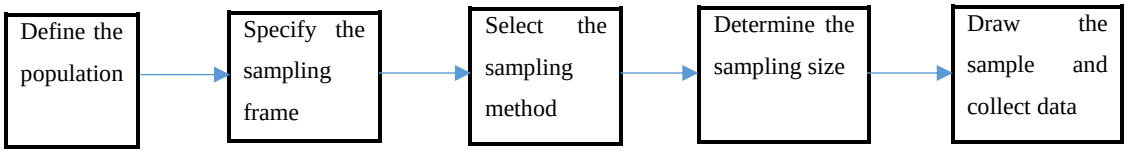
Population on is referred to as broader group of people to whom results apply (Phrasisombath, 2009). The population of study was grade 12 learners with entrepreneurship education as part of their syllabus. The purpose was to get better insight in line with the study objectives. The population was 15 high schools from townships of which seven were in Mamelodi, five in Atteridgeville and three in Soshanguve. The population of the study was 600 learners with

entrepreneurship education as part of their syllabus from the township of Tshwane as outlined in Chapter 1, Section 1.13.

3.5 SAMPLING

The quality of the sample on which subsequent analyses is based is a major determinant of the quality of research conclusions (Diamantopoulos & Schlegelmilch, 2005). Figure 3.1 presents the sampling process stages followed in this study. These stages include defining the population, specifying the sampling frame, selecting the sampling method, determining the sampling size and drawing the sample and collecting data.

Figure 3-1: The sampling processes



Source: Diamantopoulos and Schlegelmilch (2005)

3.5.1 Sampling frame

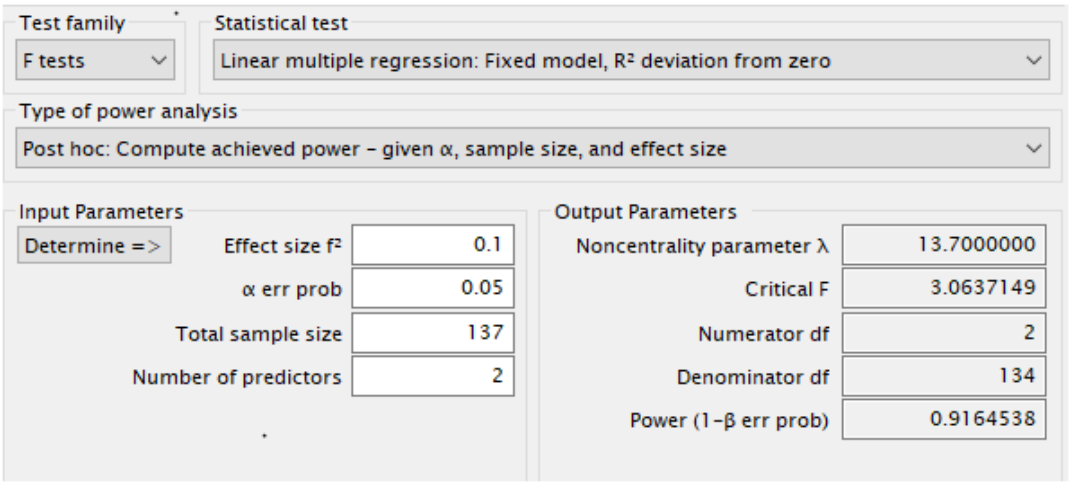
Sampling frame is defined as the source material or a list of all those within a population from which a sample is drawn (Watson, 1998). The sample frame in this study consisted of all grade 12 learners from the three townships in the City of Tshwane, namely Mamelodi, Atteridgeville and Soshanguve. These three townships are considered the biggest in the City of Tshwane (Mbuisa, 2016). However, it is often impractical and occasionally undesirable to study the entire population (Coldwell & Herbst, 2004). Therefore, the population is sampled to consist of only those units of interest that will produce accuracy in a study (Brasher & Brant, 2007). The sample frame was reduced to the grade 12 learners with entrepreneurship education as part of their syllabus extracted from 15 schools in the three townships of Tshwane, namely, Mamelodi, Atteridgeville and Soshanguve.

3.5.2 Sampling size

In drawing strong robust conclusions from the limited amount of information, it is critical that the sample size be estimated (Phrasisombath, 2009). Although the concepts underlying most methods of estimating the sample size are similar, there is no single unique method in

estimating the minimum sample size (Brasher & Brant, 2007). The sample size of the study was 240. This sample was adequate to conduct both descriptive and inferential analysis of the dataset. Solvin's formula was used to calculate the sample size for the study and the calculation is outlined in Chapter 1, Section 1.10, sub-section 1.10.2. The adequacy of the responses was analysed with a post hoc test in GPower 3.0 as illustrated in Figure 3.2 below.

Figure 3-2: Post hoc test on statistical power and adequacy of sample size



Source: Faul, Erdfelder, Buchner and Lang (2009)

3.5.3 Sampling method and technique

There are two types of sampling methods, namely, probability and non-probability methods (Leedy & Ormrod, 2015). Probability sampling allows an equal probability for each sample to be chosen, resulting in a supreme probability of a representative sample of the whole population (Creswell, 2014). The techniques that fall under the probability sampling method include random, stratified, systematic, cluster and multi-stage random sampling. Random sampling which enables the researcher to select elements and combinations of elements in the population with equal probability of being part of the sample. Stratified random sampling allows the researcher to divide the population elements into strata on the basis of some characteristics and draws at random a predetermined number of units. Systematic random sampling which allows the researcher to select one unit from the sampling frame and use interval size calculations to draw the following units. Cluster sampling which allows the researcher an opportunity to first divide the population into clusters, and then randomly select a sample from the clusters. Multi-stage systematic sampling which allows the researcher to divide the population into groups at

various levels and draws the sample from the smallest group among all the groups (Mayring, 2007).

Contrary to probability sampling method, the non-probability sampling technique involves the research's judgement (Leedy & Ormrod, 2015). When using the non-probability method, the researcher can study phenomena with a likelihood of generating valuable insights (Creswell, 2015). The non-probability sample is used on the existing theoretical and new developing insights (Creswell, 2015). The techniques that fall under the non-probability sampling method include, convenience sampling which allows the researchers to sample participants based on their own convenience. As well as purposive sampling which allows the researcher to choose the participants based on the researcher's own judgement with the purpose of achieving the study's main objective. There is also quota sampling which allows an opportunity to select the subjects based on immediate availability to fulfil the sample criteria; Snowball sampling which is mostly used when the population is unknowable or fewer methods are available to secure the required population for the study (Mayring, 2007).

Due to the lack of a complete database of schools and learners, resource limitation and time allocation for the study, it was not practical to use a probability sampling method as it enables the research to generalise findings to the population. As a result, a non-probability sampling method was used for the study. This sampling method was suitable for the purpose of the study as it has yielded a suitable sample to address the research objectives. Self-selection sampling strategy was employed to select the study participants. Saunders, Lewis and Thornhill (2009) define self-selection sampling as a non-probability sampling strategy which allows the researcher to select the study participants based on the subjective judgement of the researcher while potential participants can express their wish to participate in the study. Judgemental sampling is a non-probability sampling technique used to select the sample based on knowledge, experience and whether participants are a better fit for the study (Valliant, Dorfman, & Royall, 2000).

3.5.4 Sample for data collection

The sample for data collection was drawn from the three townships. Only learners with entrepreneurship education as part of their syllabus were targeted as the sample for this study. There were 15 schools that were targeted. There were 40 grade 12 learners per school with

entrepreneurship education as part of their syllabus, resulting to a targeted population size 600 learners with a sample size 240 learners to which questionnaires were administered.

3.6 DATA COLLECTION AND ANALYSIS

Data collection involves having the tool to collect the data which is the instrument and the approach to collect the data (Creswell, 2010). Learners were given three days to respond to the questionnaire, as a result some learners ignored to respond the questionnaire, others prioritise the questionnaire for some other work, some lost the questionnaire. Teachers' participation in collecting the data were in some instant not good, which also contributing to lesser learner participation.

3.6.1 Research instrument

Questionnaires were identified as one of the primary sources of collecting data in any research method (Richards & Schmidt, 2002). Questionnaires are undoubtedly one of the primary sources of obtaining data in any research endeavour (Blaxter, Hughes, & Tight, 2006). However, the researcher should ensure that validity, reliability and unambiguity are considered when designing a questionnaire (Richards & Schmidt, 2002). In this study, questionnaires were used to collect the data. Hungler and Polit (1995:466) define questionnaires as a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings. The instrument comprised three sections, the first section was to understand the characteristic of the sample, the second section focused on the construct of entrepreneurship education and third section focused on entrepreneurship intention. An instrument for the study was developed by the researcher in line with the research objectives and literature review. The full instrument is provided in Annexure A.

3.6.2 Survey questionnaire

Data for the research was collected through questionnaires with a group of learners in grade 12. This type of technique allows the respondents the opportunity to express their opinions without being influenced by the researcher (Reja, Manfreda, Hlebec, & Vehovar, 2003). Questionnaires are considered a quicker way of collecting research data due to the researcher not required to be present when questionnaires are completed (Richards & Schmidt, 2002). Therefore, this type of instrument was appropriate for the study due to self-administering

required from learners when responding to questionnaires. Efforts were made to ensure that the questions were of a simple nature and easily understood by the learners.

A Likert scale technique was used in designing the questionnaires. Likert scale technique is defined as a psychometric response used in questionnaires to obtain the participant's level of agreement with a statement posted to them, this done by a way of an ordinal scale (Betram, 2009). With an ordinal scale, a researcher is able to measure the standing and ordering of data without establishing the degree of distinction amongst them (Heale & Twycross, 2015).

3.7 DATA ANALYSIS

Data analysis is the most crucial part of any research as it summarises collected data (Combs & Onwuegbuzie, 2010). The analysis encompasses the interpretation of data collected using systematic and logical reasoning to determine patterns, relationships or trends (Creswell. 2010). The data collected in this study was analysed by using descriptive and inferential statistics.

Descriptive statistical analysis focuses on the thorough measurement of population characteristics (Theron, 2015). Descriptive statistics provide the synopsis of the data the researcher has actually studied (Bonnon, 2013). Descriptive analysis was used to understand the characteristics of participants using frequency and percentage frequency. Descriptive statistics were also used to analyse the central tendency and the spread of all the variables of entrepreneurship education and entrepreneurship intention. To evaluate the central tendency, mean and median was used, while skewness and kurtosis was used to evaluate standard deviation.

In addition to descriptive statistics, inferential statistical analysis involves using sample information to make inferences about the population (Theron, 2015). Inferential statistical analysis was convenient for this study because it allowed the researcher to draw conclusions about the population when it is not possible to query every member of the universe (Saunders, Lewis & Thornhill, 2009). The inferential statistics that were used to test the hypotheses were Pearson correlation and linear regression. Pearson correlation tested the significance, direction and strength of the relationship between the constructs of entrepreneurship education and entrepreneurship intention. The strength of the relationship was guided by the ranges as proposed by Pallant (2010), which are; 0 – 0.09 (no relationship), 0,1 – 0.29 (weak

relationship), 0,3 – 0, 49 (medium relationship), ≥0,5 (strong relationship). For the constructs that have a significant relationship, a linear regression was conducted to understand the extent that o entrepreneurship education can predict entrepreneurship intention.

3.8 RELIABILITY AND VALIDITY

In enhancing the quality of the study, it is important to consider validity and reliability of the data collection tools (Heale & Twycross, 2015). Validity and reliability are the crux of transparency, and they decrease the opportunities to insert researcher bias in research (Singh, 2014).

3.8.1 Validity

Validity is primarily on the mind of those developing measures that seek valid outcomes from any form of assessment that is trustworthy and accurate (Fraenkel & Wallen, 2003). Once the results of an assessment have been correctly interpreted, validity will then influence the way that instruction changes (Heale & Twycross, 2015).

3.8.1.1 Content validity

Content validity was utilised for this study. Content validity looks at whether the instrument satisfactorily covers all the content that it should with respect to the variable (Zohrabi, 2003). Therefore, validity for this study was ensured through carrying out a pilot study in ensure that questionnaire was measuring what it is supposed to measure.

3.8.1.2 Construct validity

At the data analysis phase, construct validity was conducted using Principal Component Analysis (PCA) with Varimax Rotation. Construct validity refers to whether the experimental demonstration reflects the true theoretical meaning of a concept (Golafshani, 2003). The word ‘construct’ refers to something that happens in the brain, for example, level of emotion, ability and skill (Heale & Twycross, 2015). The Kaiser-Meyer-Olkin measures sampling suitability for each variable, indicating the proportion of variance in variables (Hill, 2011). The lower the proportion, the more appropriate data is to factor analysis i.e. values close to 1.0 indicate that a factor analysis may be useful with the data, while value is less than 0.50 indicate the results of the factor analysis won't be very useful (Taherdoost, Sahibuddin & Jalaliyoon, 2014). The Kaiser Mayer-Olkin measure of sampling adequacy (KMO) were 0.780 for entrepreneurship

education knowledge and skills and 0.826 for entrepreneurship intention, confirming that factor analysis may be useful with the data. Factor analysis is a statistical method used to reduce data in frequent variables into just limited variables (Swisher, Beckstead & Bebeau, 2004). Furthermore, Varimax rotation was used to clarify the relationship among factors by removing the middle ground and more precisely identifying the factor upon which data load (Hill, 2011). In this study, construct validity measured if the research is actually measuring intention. The output factor analysis value was 0.826 which is above 0.50 and closer 1.0 confirming factor analysis may be useful with the data.

3.8.2 Reliability

Measuring instruments should have approximately the same responses each time the test is completed (Zohrabi, 2013). Although it is not possible to give an exact calculation of reliability, an estimate of reliability can be achieved through different measures (Trochim, 2009). This study was tested for reliability using Cronbach Alpha coefficient. The output Alpha coefficient was 0.780 which is high that the accepted 0.7. In determining the internal consistency of an instrument, Cronbach's α is commonly used (Singh, 2014). Using Cronbach's Alpha (α) the average of all correlations in every combination were determined. The acceptable level of reliability was 0.7 and higher, as proposed by George and Mallery (2003).

3.9 ETHICAL CONSIDERATION

Ethics are referred as the moral values that administer a person's behaviour (Dabale, & Masese, 2014). Research ethics provide a guideline that support researchers to do what is morally and legally right in research and ensuring that research is done without harming anyone in the process (Resnik, 2015). Participants in the survey were informed about their right of withdrawing from the survey at any point of the survey. Permission to access schools and learners was requested from the Gauteng Department of Education. Due to participants being underage, a consent letter was sent to the parents requesting the parents' consent for learners' participation in the study. The study background, purpose and intentions were clearly communicated to the participants prior to the commencement of the study. Only after confirmation and signed consent letters were received, were participants approached to participate in the research.

Confidentiality refers to the researcher taking steps to project the identity of the research subject from being discovered by unauthorised people (Giordano, O'Reilly, Taylor, & Dogra, 2007). In this study steps were taken to ensure the identity of participants was kept confidential by ensuring that confidentiality agreements are entered into with anyone who will come in contact with participants information and copies of participants information are stored in a secured place. Questionnaires were self-administered, giving participants an opportunity to respond to them at their convenient time and not interrupting participants' schooling.

3.10 METHODOLOGY LIMITATIONS

Due to the nature of the study and the research objectives, the study was limited to 15 high schools from three townships (Attridgeville, Mamelodi and Soshanguve) in the City of Tshwane, Gauteng province in one geographical area. Thus, there is a need to conduct a further research across different educational levels, more schools, townships and bigger geographical regions.

3.11 SUMMARY

The chapter presented the outline of the research methodology employed in the study. The population of the study is the grade 12 learners with entrepreneurship education as part of the schooling syllabus. The study was focused on the three biggest townships of the City of Tshwane, namely, Mamelodi, Atteridgeville and Soshanguve. The targeted sample size of 240 grade 12 high school learners from 15 high schools. Sampling within the townships and the schools was done by means of a judgemental sampling approach.

Due to the quantitative nature of this study, self-administrated paper-based questionnaires were used as a primary data collection instrument which utilised a closed-ended, self-directed questionnaire. Data analysis was conducted by means of descriptive and inferential statistics. Content validity was conducted using Principal Component Analysis (PCA) with varimax Rotation at the data analysis stage. The research methodology selected provided a comprehensive collection of tools in order to sample, analyse and interpret the data collected.

CHAPTER 4

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 INTRODUCTION

The purpose of this study was to assess the effectiveness of entrepreneurship education in high school learners in the City of Tshwane, South Africa. A quantitative research approach was selected for this study to investigate the objectives. Data was collected through questionnaires. In this chapter, the results from the findings of the 137 respondents are presented and interpreted. The chapter starts with the analyses of respondent's frequent responses, descriptive statistics validity and reliability test, factor analysis, t-test, constructs relationship, correlation and regression analyses. The population size was 600 with a sample size of 240. There were 137 responses, equating to a response rate of 57% (137/240 x 100) as outlined in Chapter 1, Section 1.10, sub-section 1.10.2.

4.2 SECTION 1: DEMOGRAPHIC PROFILE ON A QUESTION TO QUESTION BASIS

There was a total of eight variables which were used to profile the respondents, of which three were personal variables and the other five were educational characteristics. The following section will present the demographical information of the respondents, through a table and a graphical presentation for each question.

4.2.1 Personal characteristics

Question 1: Please indicate if you are currently in grade 12?

All the 137 respondents were currently in grade 12 in line with the requirements of the study targeting only grade 12 learners.

Table 4-1: Participant current grade.

		Frequency (n)	Percent %
Please indicate if you are currently in Grade 12	Yes	137	100.0

Source: Researcher's own construction.

Question 2: Gender

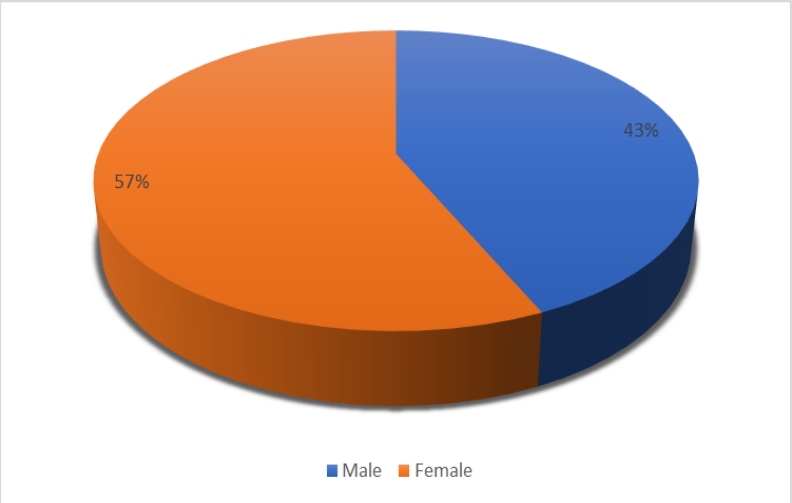
Out a total of 137 responses three is missing from system resulting to 134 responses remaining. Of the 134 responses 57% (n=76) indicated females and 43% (n=58) males, as indicated in Table 4.2 and demonstrated in Figure 4.1

Table 4-2: Gender.

		Frequency (n)	Percent %	Valid Percent %
After grade 12 do you have an intention to go to?	Male	58	42.3	43
	Female	76	55.5	57
	Total	134	97.8	100
	Missing system	3	2.2	
	Total	137	100	

Source: Researcher's own construction.

Figure 4-1: Profile of participants gender.



Source: Researcher's own construction.

Question 3: Please indicate your position in the Family (birth position).

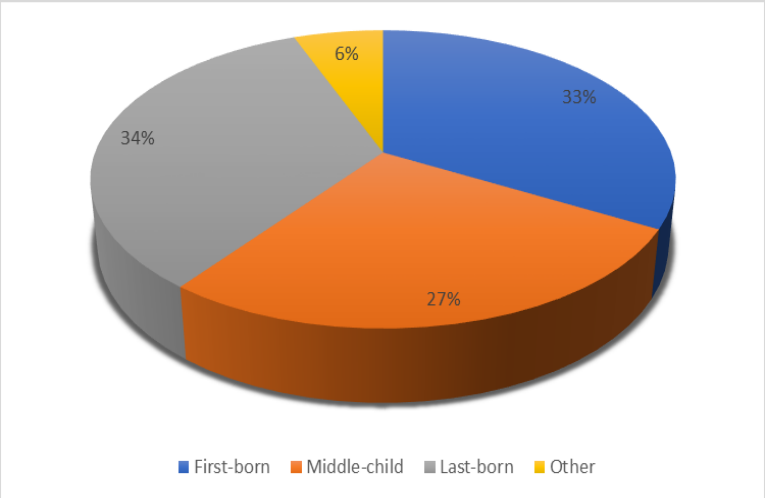
Out a total of 137 responses one is missing from system resulting to 136 responses remaining. Of the 136 responses 34% (n=46) indicated birth position in the family as last-born, followed by first-born with 33% (n=45), with a further 27% (n=37) middle child and 6% (n=8) other birth positions, as indicated in Table 4.3 and demonstrated in Figure 4.2.

Table 4-3: Birth position of respondents.

		Frequency (n)	Percent %	Valid Percent %
Please indicate your position in the Family (birth position).	First-born	45	32.8	33
	Middle-child	37	27.0	27
	Last-born	46	33.6	34
	Other	8	5.8	6
	Total	136	99.3	100
	Missing system	1	0.7	
	Total	137	100	

Source: Researcher's own construction.

Figure 4-2: Profile of participants' birth position.



Source: Researcher's own construction.

4.2.2 Educational characteristics

Question 4: Please indicate the township in which your school is located.

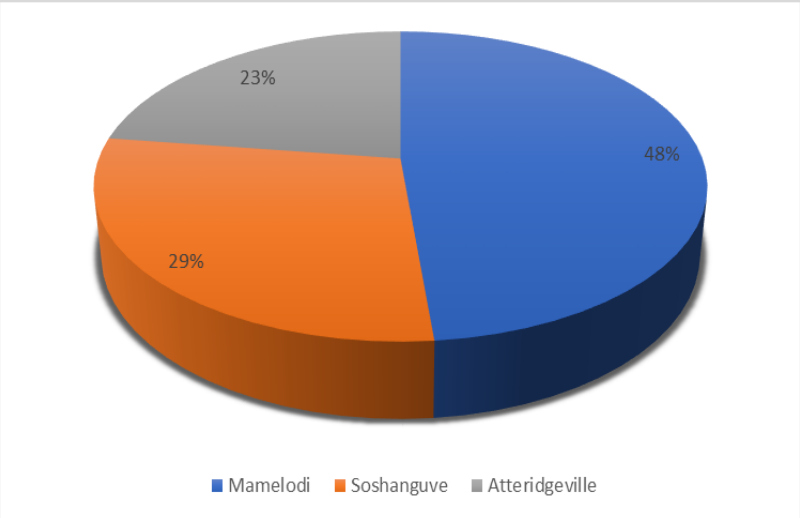
Out a total of 137 responses one is missing from system resulting to 136 responses remaining. Of the 136 responses 48% (n=66) indicated schools located in the township of Mamelodi, followed by 29% (n=39) of the responses in Soshanguve and a further 23% (n=31) of the responses indicated location in the Atteridgeville township, as indicated in Table 4.4 and demonstrated in Figure 4.3.

Table 4-4: School location.

		Frequency (n)	Percent %	Valid Percent %
Please indicate the township in which your school is located.	Mamelodi	66	48.2	48
	Soshanguve	39	28.5	29
	Atteridgeville	31	22.6	23
	Total	136	99.3	100
	Missing system	1	0.7	
	Total	137	100	

Source: Researcher's own construction.

Figure 4-3: Profile of participants' school location.



Source: Researcher's own construction.

Question 5: Does your family own a business.

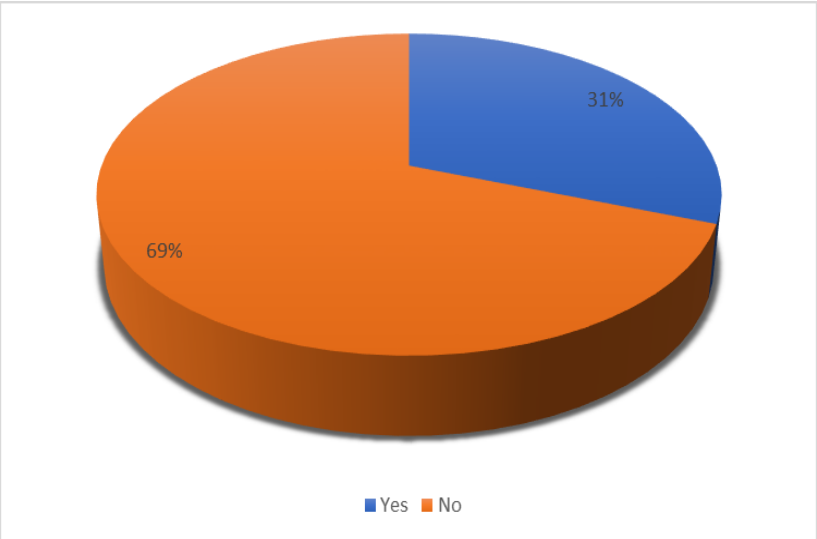
Out a total of 137 responses 10 respondents did not answer the question resulting in 127 responses. Of the 127 responses 69% (n=88) indicated family did not own any business, while 31% (n=39) indicated family owned businesses, as indicated in Table 4.5 and demonstrated in Figure 4.4.

Table 4-5: Family business ownership.

		Frequency (n)	Percent %	Valid Percent %
Does your family own a business?	Yes	39	28.5	31
	No	88	64.2	69
	Total	127	92.7	100
	Missing system	10	7.3	
	Total	137	100	

Source: Researcher's own construction.

Figure 4-4: Profile of participants' family business ownership.



Source: Researcher's own construction.

Question 6: Please indicate current main field of study.

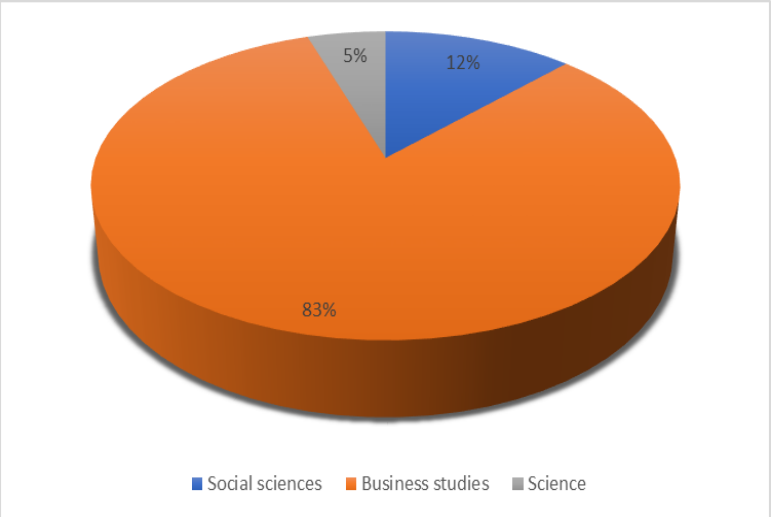
There was a total of 137 responses, of these responses 83% (n=113) indicated field of study in commerce (business studies), while 12% (n=17) were in Social sciences and 5% (n=7) in Science, as indicated in Table 4.6 and illustrated in Figure 4.5.

Table 4-6: Field of study.

		Frequency (n)	Percent %	Valid Percent %
Please indicate your current main field of study.	Social sciences	17	12.4	12
	Business studies	113	82.5	83
	Science	7	5.1	5
	Total	137	100.0	100
	Missing system	0	0	
	Total	137	100	

Source: Researcher's own construction.

Figure 4-5: Profile of participants' field of study.



Source: Researcher's own construction.

Question 7: Is entrepreneurship part of any of your subjects that you learn at school?

The results show that all the respondents had entrepreneurship as part of the subjects that they learn at school.

Table 4-7: Entrepreneurship as a choice of subject.

		Frequency (n)	**Percent %**
Is entrepreneurship part of any of your subjects that you learn at school?	Yes	137	100.0

Source: Researcher's own construction.

Question 8: After grade 12 do you have an intention to go to university?

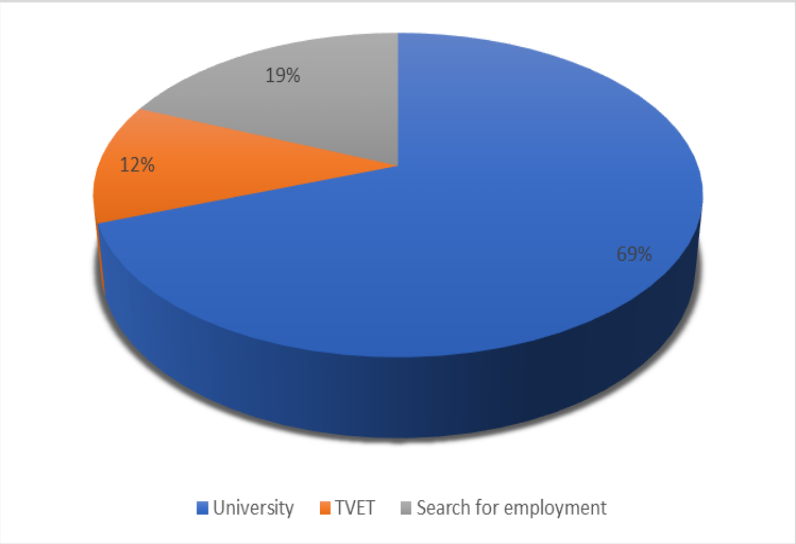
Out a total of 137 responses three responses were missing from system, resulting in 134 responses remaining. Of the 134 responses 69% (n=93) indicated that after grade 12 having intention of going to university, while 19% (n=25) indicating intention of looking for employment and 12% (n=16) indicating intention of going to Technical and Vocational Education and Training (TVET). Table 4.8 and demonstrated in Figure 4.6.

Table 4-8: Grade 12's intention after school.

		Frequency (n)	Percent %	Valid Percent %
After grade 12 do you have an intention to go to?	University	93	67.9	69
	TVET	16	11.7	12
	Search for employment	25	18.2	19
	Total	134	97.8	100
	Missing system	3	2.2	
	Total	137	100	

Source: Researcher's own construction

Figure 4-6: Profile of participants' further intentions after high school.



Source: Researcher's own construction.

4.3 SECTION 2: ENTREPRENEURSHIP EDUCATION, KNOWLEDGE AND SKILLS

Question 1: In the Economic Management Science (EMS) class, we are taught about what entrepreneurship means.

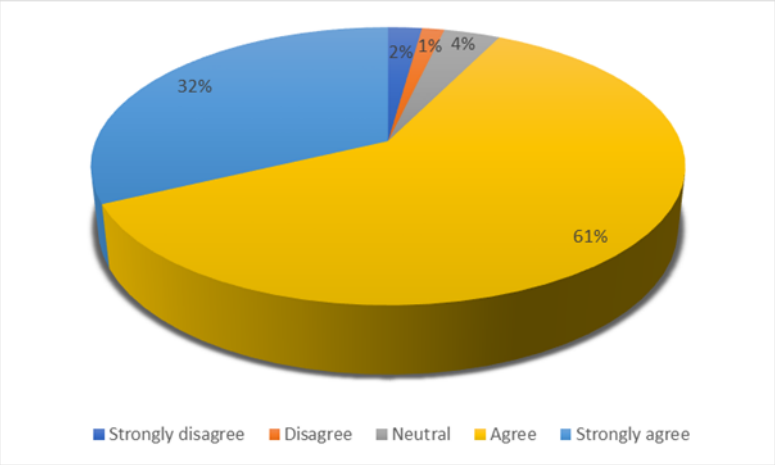
Out a total of 137 responses, one response was missing from system resulting in 136 responses. Of the 136 responses 61% (n=83) indicated agree and 32% (n=43) of responses strongly agree that entrepreneurship is taught in Economic Management Science (EMS), whereas 4% (n=5) of the responses were neutral, 2% (n=3) indicated strongly disagreed and 1% (n=2) disagreed. As indicated in Table 4.9 and demonstrated in Figure 4.7.

Table 4-9: Learners' frequent responses on entrepreneurship been taught in the EMS class.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	3	2.2	2
	Disagree	2	1.4	1
	Neutral	5	3.6	4
	Agree	83	60.1	61
	Strongly agree	43	31.9	32
	Total	136	99.3	100.0
Missing	System	1	0.7	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-7: Profile of participants' entrepreneurship been taught in the EMS class.



Source: Researcher's own construction.

Question 2: In the EMS class, we are taught how to draft a business plan.

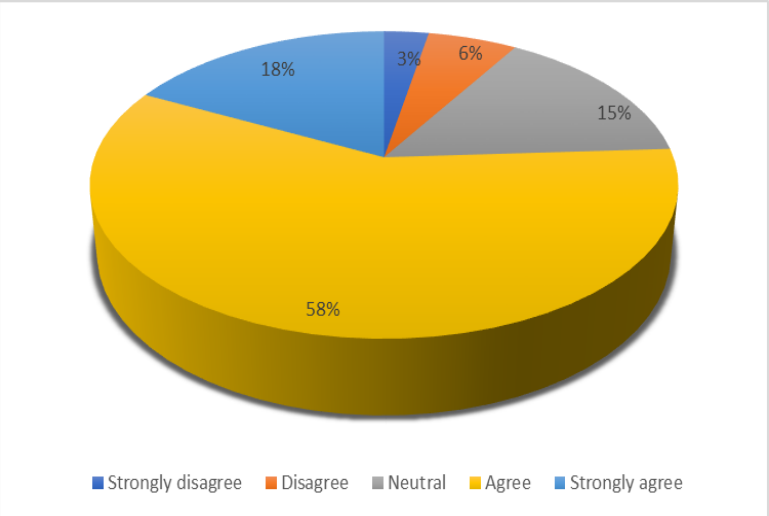
Out a total of 137 responses one was missing from system resulting in 136 responses remaining. Of the 136 responses 58% (n=79) indicated agree and 18% (n=24) strongly agree that drafting a business plan is taught in EMS, whereas 15% (n=21) of the responses were neutral and 6% (n=8) indicated disagree and 3% (n=4) strongly disagree, as indicated in Table 4.10 and demonstrated in Figure 4.8.

Table 4-10: Learners' taught how to draft business plan in the EMS class.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	4	2.9	3
	Disagree	8	5.8	6
	Neutral	21	15.2	15
	Agree	79	58.0	58
	Strongly agree	24	17.4	18
	Total	136	99.3	100.0
Missing	System	1	.7	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-8: Business plan been taught in EMS class.



Source: Researcher's own construction.

Question 3: As learners we are sometimes required to come up with business ideas which we present in the EMS class.

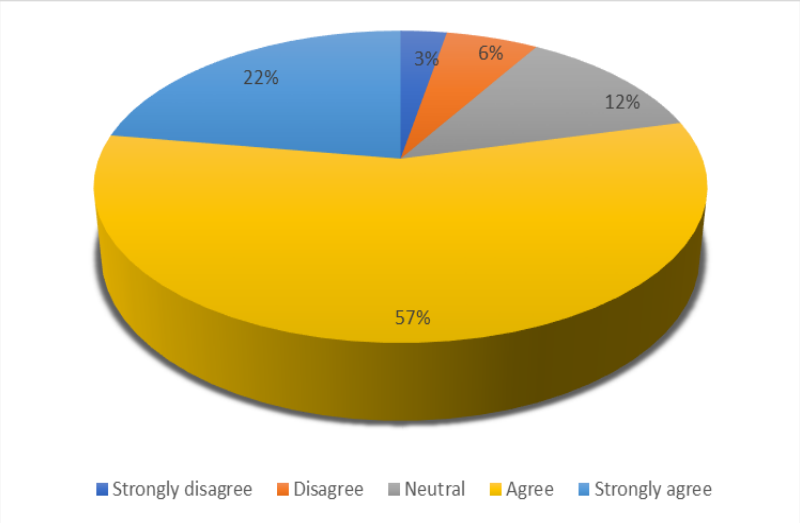
Out a total of 137 responses, 57% (n=78) of the respondents indicated agree that they are sometimes required to come up with business ideas which are present in the EMS class, while 22% (n=30) indicated strongly agree, 12% (n=17) were neutral, 6% (n=8) disagree and 3% (n=4) strongly disagree, as indicated in Table 4.11 and demonstrated in Figure 4.9.

Table 4-11: Learners' frequent responses on learners been required to come up and present business ideas in the EMS class.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	4	2.9	3
	Disagree	8	5.8	6
	Neutral	17	12.3	12
	Agree	78	56.5	57
	Strongly agree	30	22.5	22
	Total	137	100.0	100.0

Source: Researcher's own construction.

Figure 4-9: Profile of participants' requirement to come up and present business ideas in the EMS class.



Source: Researcher's own construction.

Question 4: We sometimes conduct research from the internet about different aspects of entrepreneurship

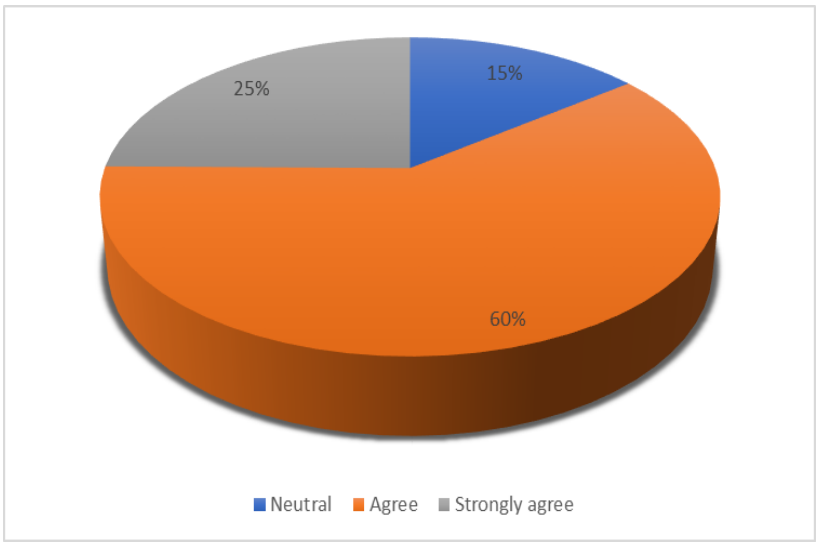
Out a total of 137 responses one was missing from system resulting in 136 responses remaining. Of the 136 responses 60% (n=82) agree that sometimes research is conduct from the internet about different aspects of entrepreneurship, while 25% (n=34) indicated strongly agree, 15% (n=20) were neutral and zero indicated disagree and strongly disagree, as indicated in Table 4.12 and demonstrated in Figure 4.10.

Table 4-12: Learners' frequent responses on learners conducting research from the internet about different aspects of entrepreneurship.

		Frequency	Percent %	Valid Percent %
Valid	Neutral	20	14.5	15
	Agree	82	60.1	60
	Strongly agree	34	24.6	25
	Total	136	99.3	100.0
Missing	System	1	0.7	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-10: Profile of participants' conducting research from the internet about entrepreneurship.



Source: Researcher's own construction.

Question 5: We sometimes conduct research within the community about different aspects of entrepreneurship.

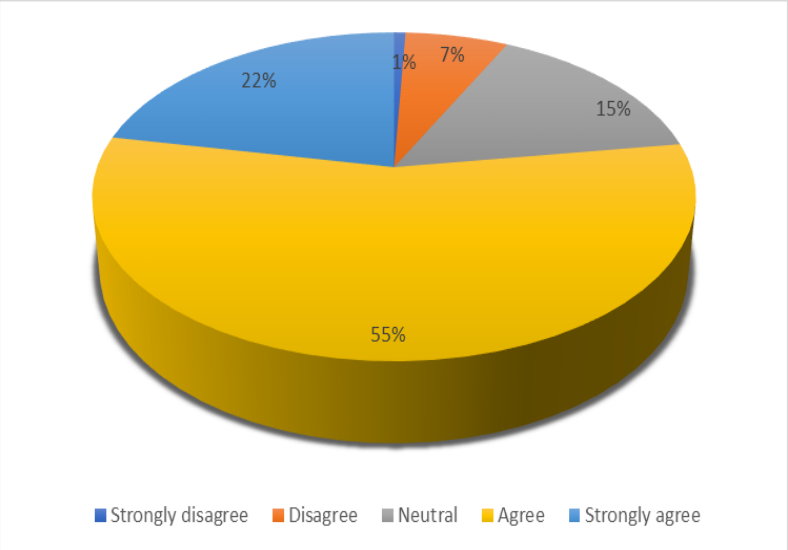
There was a total of 136 responses as one of the respondents did not answer the question. Of the 136 responses 55% (n=75) agree that there is sometimes a requirement to come up with business ideas which we present in the EMS class, while 22% (n=30) strongly agree, 15% (n=21) were neutral, 7% (n=9) disagree and 1% (n=1) strongly disagree, as indicated in Table 4.13 and demonstrated in Figure 4.11.

Table 4-13: Responses on learner's conducting entrepreneurship research within the community.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	1	0.7	1
	Disagree	9	6.5	7
	Neutral	21	15.2	15
	Agree	75	55.1	55
	Strongly agree	30	21.7	22
	Total	136	99.3	100.0
Missing	System	1	0.7	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-11: Profile of participants' conducting research within the community about entrepreneurship.



Source: Researcher's own construction.

Question 6: We are sometimes required to do entrepreneurship experimental activities in my EMS class.

There were 131 responses with 6 responses missing from the system. Of the 131 responses 48% (n=63) agree that there is sometimes a requirement to do entrepreneurship experimental activities in the EMS class, while 21% (n=28) strongly agree, 17% (n=22) were neutral, 13%

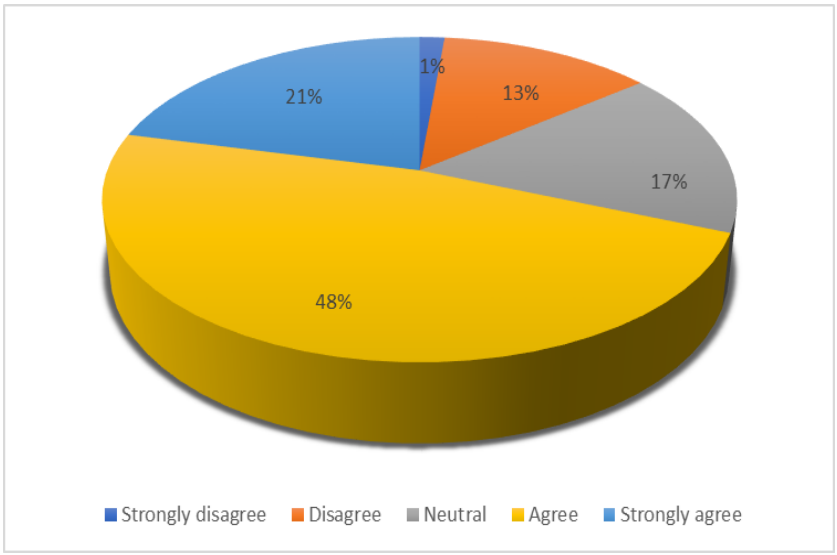
(n=17) disagree and 1% (n=1) strongly disagree, as indicated in Table 4.14 and demonstrated in Figure 4.12.

Table 4-14: Responses on learner's being required to do entrepreneurship experimental activities in the EMS class.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	1	1.4	1
	Disagree	17	12.3	13
	Neutral	22	15.9	17
	Agree	63	45.7	48
	Strongly agree	28	20.3	21
	Total	131	95.7	100.0
Missing	System	6	4.3	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-12: Profile of participants' conducting entrepreneurship experimental activities in the EMS class.



Source: Researcher's own construction.

Question 7: We are sometimes required to sell some goods to fellow learners.

There was a total of 134 responses as 3 respondents did not respond to the question. Of the 134 responses 40% (n=54) agree that there is sometimes requirement to sell some goods to fellow

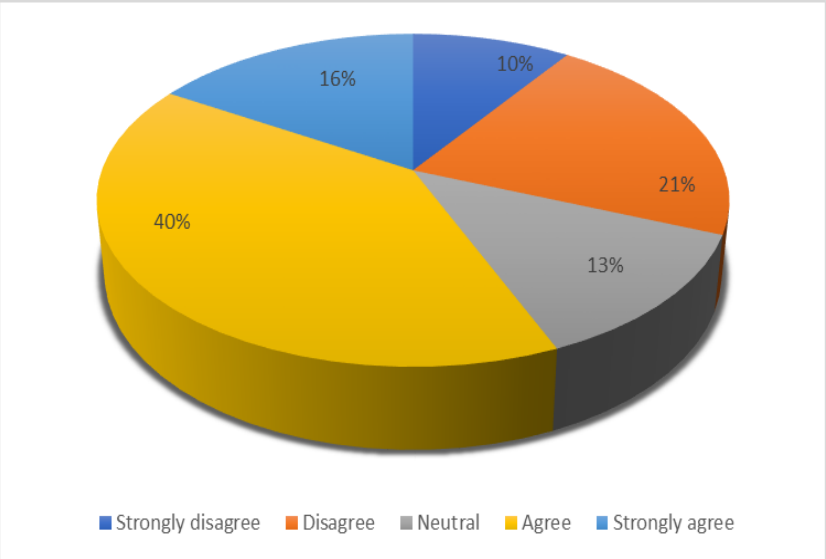
learners, while 16% (n=22) strongly agree, 13% (n=17) were neutral, 21% (n=28) disagree and 10% (n=13) strongly disagree, as indicated in Table 4.15 and demonstrated in Figure 4.13.

Table 4-15: Responses on learner's being required to sell some goods to fellow learners.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	13	9.4	10
	Disagree	28	21.0	21
	Neutral	17	12.3	13
	Agree	54	39.1	40
	Strongly agree	22	15.9	16
	Total	134	97.8	100
Missing	System	3	2.2	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-13: Profile of participants 'conducting sells of some goods to the follow learners.



Source: Researcher's own construction.

Question 8: At my school we sometimes get presentations from successful entrepreneurs.

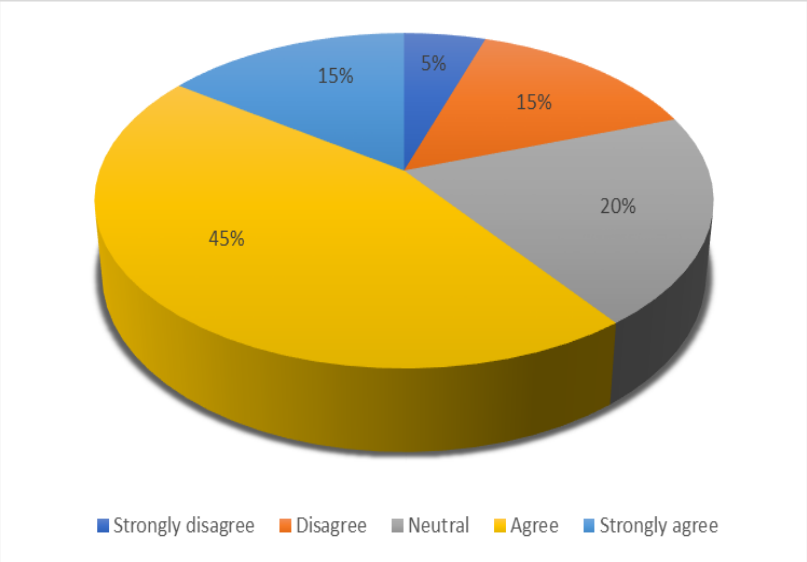
Out a total of 137 responses 45% (n=61) agree that there are sometimes presentations from successful entrepreneurs, while 15% (n=21) strongly agree, 20% (n=28) were neutral, 15% (n=20) disagree and 5% (n=7) strongly disagree, as indicated in Table 4.16 and demonstrated in Figure 4.14.

Table 4-16: Responses on learners getting presentations from successful entrepreneurs.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	7	5.1	5
	Disagree	20	14.5	15
	Neutral	28	20.3	20
	Agree	61	44.9	45
	Strongly agree	21	15.2	15
	Total	137	100.0	100.0

Source: Researcher's own construction.

Figure 4-14: Profile of participants' getting presentations from successful entrepreneurs.



Source: Researcher's own construction.

Question 9: After learning about entrepreneurship, I am encouraged to start my own business.

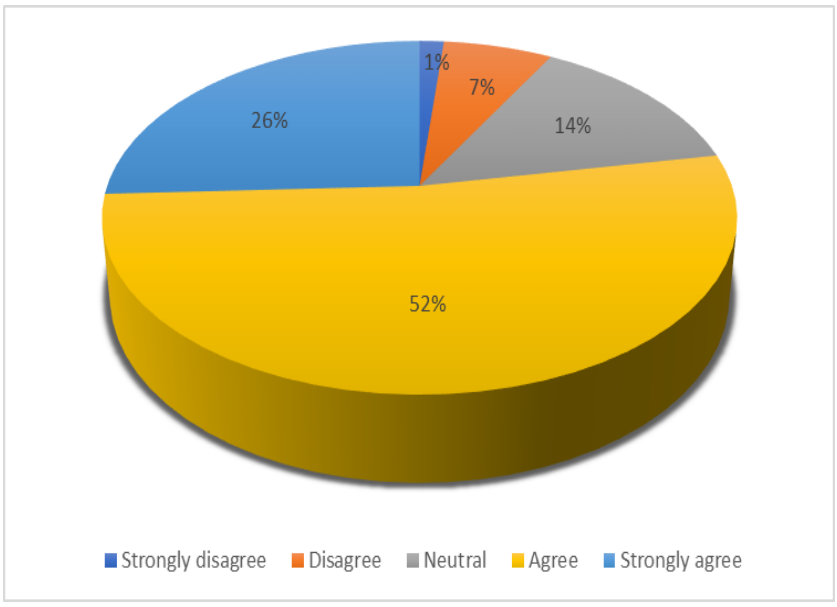
Out a total of 137 responses two is missing from system resulting in 135 responses remaining. Of the 135 responses 52% (n=70) agree indicated that after learning about entrepreneurship, they were encouraged to start their own business, while 26% (n=35) strongly agree, 14% (n=19) were neutral, 7% (n=9) disagree and 1% (n=2) strongly disagree, as indicated in Table 4.17 and demonstrated in Figure 4.15.

Table 4-17: Responses on learners being encouraged to start their own business after entrepreneurship learning.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	1.4	1
	Disagree	9	6.5	7
	Neutral	19	13.8	14
	Agree	70	51.4	52
	Strongly agree	35	25.4	26
	Total	136	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-15: Profile of participants encouraged to start their own business after entrepreneurship learning.



Source: Researcher's own construction

Question 10: The content and the teaching of EMS at my school gives me confidence to engage other people about business.

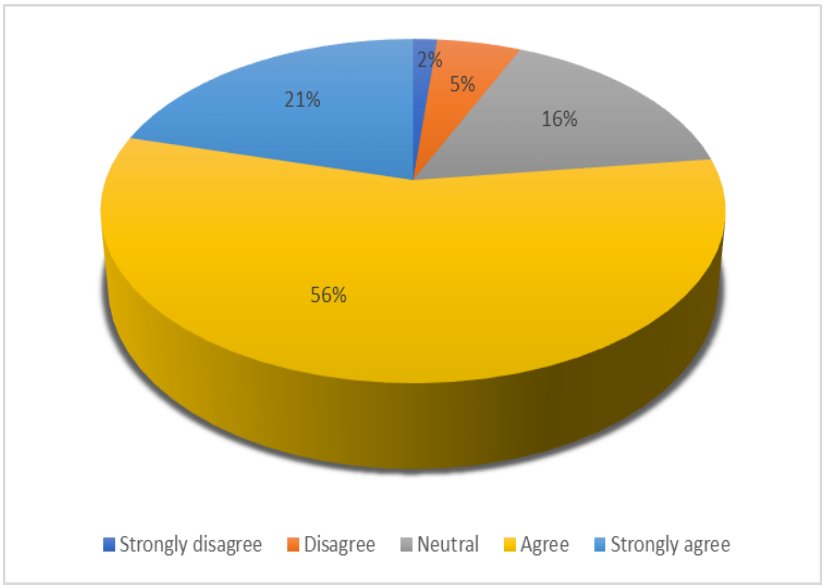
There were a total 134 responses with 3 responses missing. Of the 134 responses 56% (n=75) agree that the content and the teaching of EMS their school gives them confidence to engage other people about business, while 21% (n=28) strongly agree, 16% (n=22) were neutral, 5% (n=7) disagree and 2% (n=2) strongly disagree, as indicated in Table 4.18 and demonstrated in Figure 4.16.

Table 4-18: Learners' frequent responses on the content and the teaching of EMS gives learners confidence to engage other people about business

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	1.4	2
	Disagree	7	5.1	5
	Neutral	22	15.9	16
	Agree	75	55.1	56
	Strongly agree	28	20.3	21
	Total	135	97.8	100.0
Missing	System	3	2.2	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-16: Profile of participants been encouraged by the content and teaching of EMS to engage other people about business



Source: Researcher's own construction

Question 11: The content and the teaching of EMS at my school helped me to easily identify business opportunities.

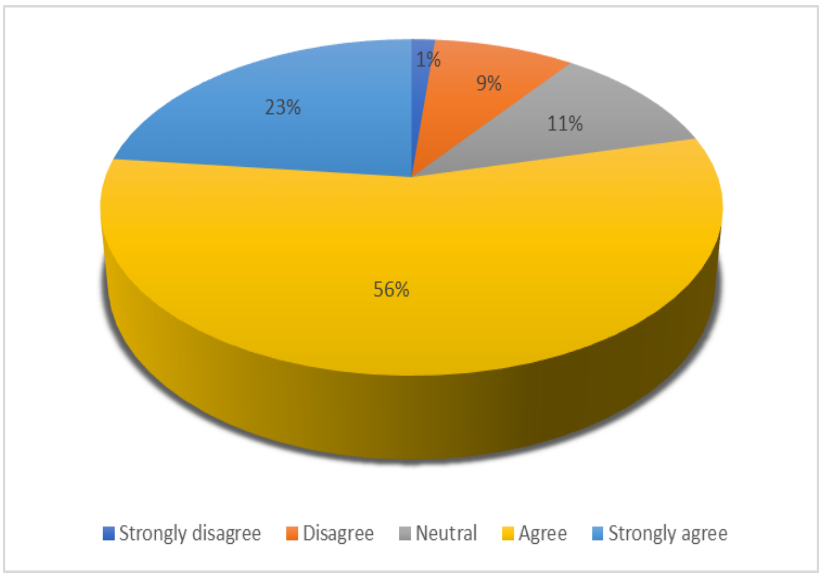
Out a total of 137 responses 56% (n=76) agree that the content and the teaching of EMS at school helped to easily identify business opportunities, while 23% (n=32) strongly agree, 11% (n=15) were neutral, 9% (n=12) disagree and 1% (n=2) strongly disagree, as indicated in Table 4.19 and demonstrated in Figure 4.17.

Table 4-19: Learners' frequent responses on the content and the teaching of EMS helping learners to easily identify business opportunities.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	1.4	1
	Disagree	12	8.7	9
	Neutral	15	10.9	11
	Agree	76	55.8	56
	Strongly agree	32	23.2	23
	Total	137	100.0	100.0

Source: Researcher's own construction.

Figure 4-17: Profile of participants been encouraged by the content and the teaching of EMS to easily identify business opportunities.



Source: Researcher's own construction.

Question 12: The content and the teaching of EMS at my school has encouraged me to put money into good use.

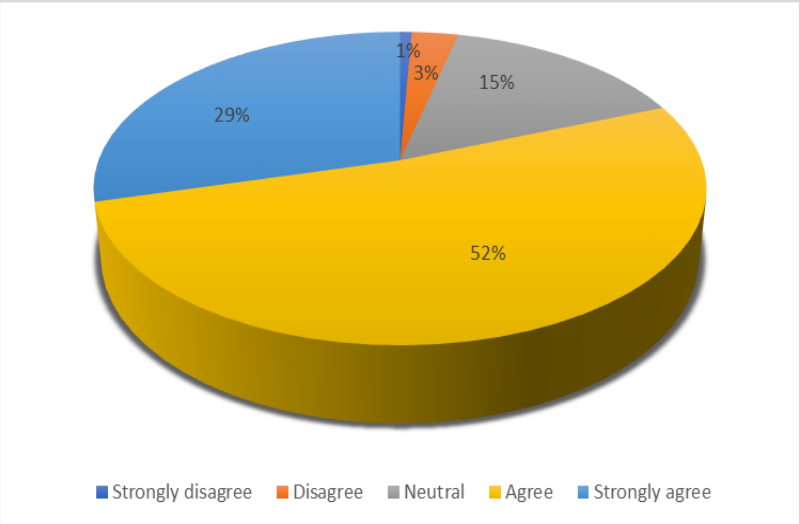
Out a total of 137 responses one is missing from system resulting in 136 responses remaining. Of the 136 responses 52% (n=70) of the responses agree that the content and the teaching of EMS at their school encourages putting money into good use, whereas 29% (n=40) strongly agree, 15% (n= 21) were neutral, 3% (n=4) disagree and 1% (n=1) strongly disagree, as indicated in Table 4.20 and demonstrated in Figure 4.18.

Table 4-20: Learners' frequent responses on the content and the teaching of EMS encouraged them put money into good use.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	1	0.7	1
	Disagree	4	2.9	3
	Neutral	21	15.2	15
	Agree	70	51.4	52
	Strongly agree	40	29.0	29
	Total	136	99.3	100.0
Missing	System	1	0.7	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-18: Profile of participants been encouraged by the content and teaching of EMS to put money into good use.



Source: Researcher's own construction.

Question 13: Through the practical experiment projects of EMS at my school, I now know how to make money through entrepreneurship activities.

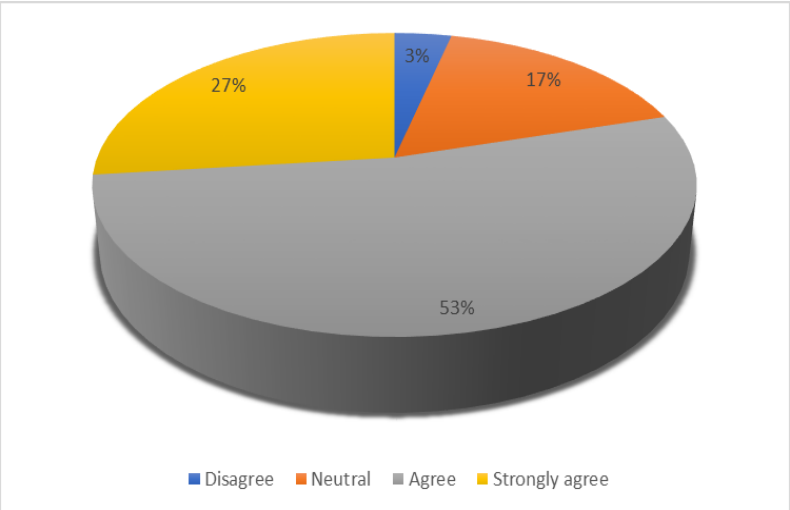
Out a total of 137 responses 53% (n=73) agree that through the practical experiment projects of EMS at school, there is now knowledge of how money is made through entrepreneurship activities, while 27% (n=37) strongly agree, 17% (n=23) were neutral, 3% (n=4) disagree and none of the responses indicated strongly disagree, as indicated in Table 4.21 and demonstrated in Figure 4.19.

Table 4-21: The learners' frequent on practical experiment projects of EMS encouraged learners to make money through entrepreneurship activities.

		Frequency	Percent %	Valid Percent %
Valid	Disagree	4	3.6	3
	Neutral	23	16.7	17
	Agree	73	52.9	53
	Strongly agree	37	26.8	27
	Total	137	100.0	100.0

Source: Researcher's own construction.

Figure 4-19: Profile of participants been encouraged by the practical experiment projects of EMS to make money through entrepreneurship activities.



Source: Researcher's own construction.

Question 14: I will be able to start my own business using what I have been taught in my EMS class.

Out a total of 137 responses two were missing from system resulting in 135 responses remaining. Of the 135 responses 58% (n=78) agree that they will be able to start their own

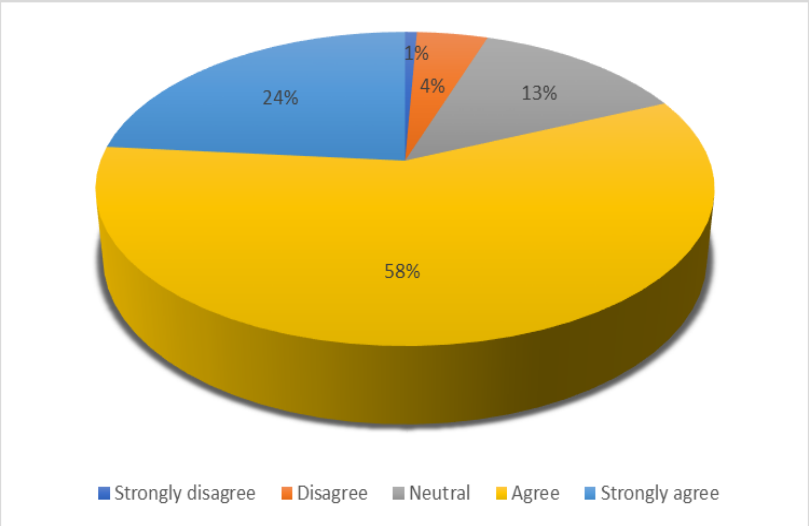
business using what they are been taught in their EMS class, while 24% (n=32) strongly agree, 13% (n=18) were neutral, 4% (n=6) disagree and 1% (n=1) strongly disagree, as indicated in Table 4.22 and demonstrated in Figure 4.20.

Table 4-22: Learners frequent response on Using what they have been taught in the EMS class learners able to start their own businesses.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	1	0.7	1
	Disagree	6	4.3	4
	Neutral	18	13.0	13
	Agree	78	57.2	58
	Strongly agree	32	23.2	24
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-20: Profile of participants using what has been taught in the EMS class to start their own business.



Source: Researcher's own construction.

Question 15: From what I have been taught in my EMS class I will be able to resolve business related issues.

Out a total of 137 responses two is missing from system resulting in 135 responses remaining. Of the 135 responses 60% (n=81) agree that they will be able resolve business related issues from what they have been taught in their EMS class, while 16% (n=22) strongly agree, 16%

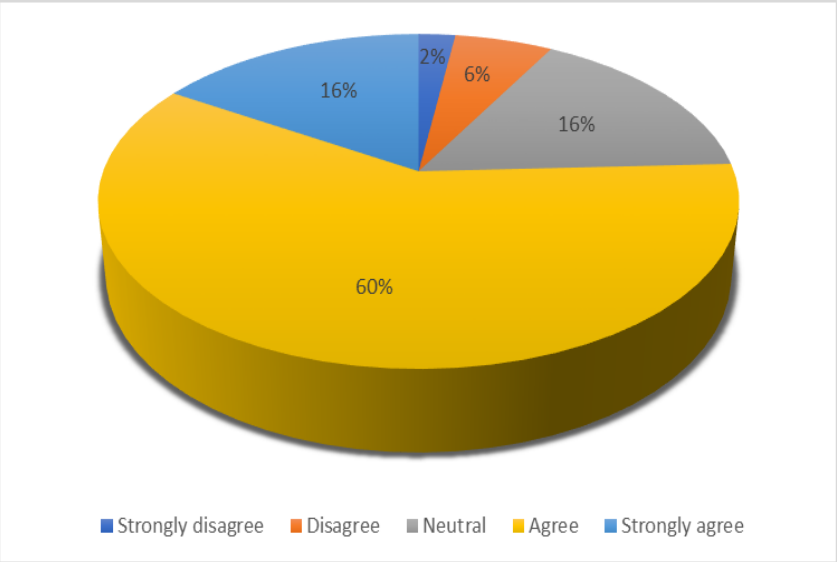
(n=22) were neutral, 6% (n=8) disagree and 2% (n=2) strongly disagree, as indicated in Table 4.23 and demonstrated in Figure 4.21.

Table 4-23: Learners frequent response on Using what they are been taught in the EMS class learners will be able resolve business related issues.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	2.2	2
	Disagree	8	5.8	6
	Neutral	22	15.9	16
	Agree	81	58.7	60
	Strongly agree	22	15.9	16
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-21: Profile of participants using what has been taught in the EMS class will be able to resolve business related issues.



Source: Researcher's own construction.

Question 16: What is being taught in EMS class has made me excited about entrepreneurship as a career.

Out a total of 137 responses two is missing from system resulting in 135 responses remaining. Of the 135 responses 49% (n=66) agree that they have been made excited about entrepreneurship as a career, while 24% (n=33) strongly agree, 20% (n=27) were neutral, 7%

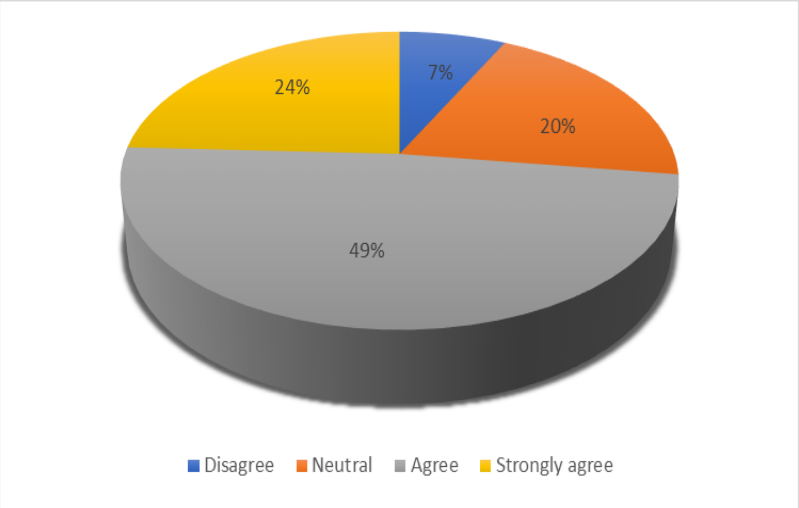
(n=10) disagree and none of the responses strongly disagree, as indicated in Table 4.24 and demonstrated in Figure 4.22.

Table 4-24: Learners frequent response on what they are been taught in the EMS made learners excited about entrepreneurship as a career

		Frequency	Percent %	Valid Percent %
Valid	Disagree	9	7.2	7
	Neutral	27	19.6	20
	Agree	66	47.8	49
	Strongly agree	33	23.9	24
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-22: Profile of participants excitement about entrepreneurship as a career from what has been taught in the EMS class.



Source: Researcher's own construction.

Question 17: I believe starting a new business is an attractive career.

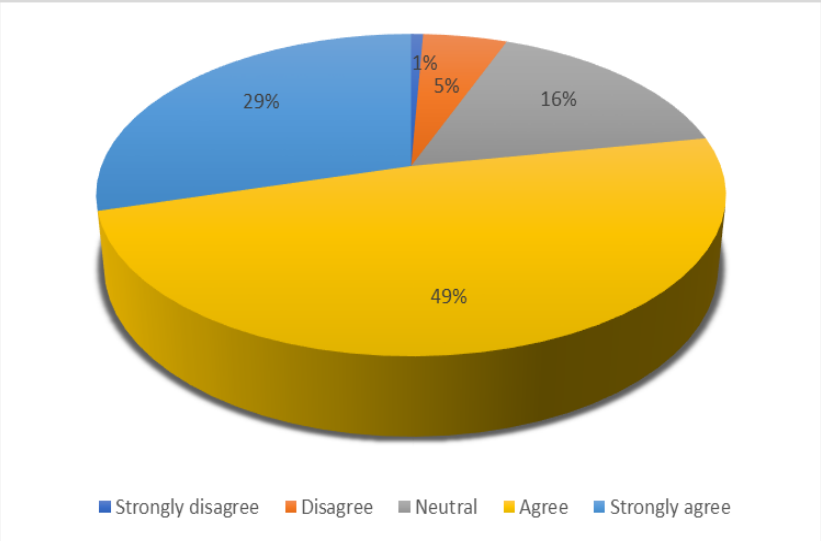
Out a total of 137 responses two is missing from system resulting in 135 responses remaining. Of the 135 responses 49% (n=66) agree that starting a new business is an attractive career, while 29% (n=39) strongly agree, 16% (n=22) were neutral, 5% (n=7) disagree and 1% (n=1) strongly disagree, as indicated in Table 4.25 and demonstrated in Figure 4.23.

Table 4-25: Learners frequent responses on the attractiveness of starting a new business as a career.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	1	0.7	1
	Disagree	7	5.1	5
	Neutral	22	15.9	16
	Agree	66	47.8	49
	Strongly agree	39	29.0	29
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-23: Profile of participants believing that starting a new business in an attractive career.



Source: Researcher's own construction.

Question 18: I am encouraged to start a new business as a career.

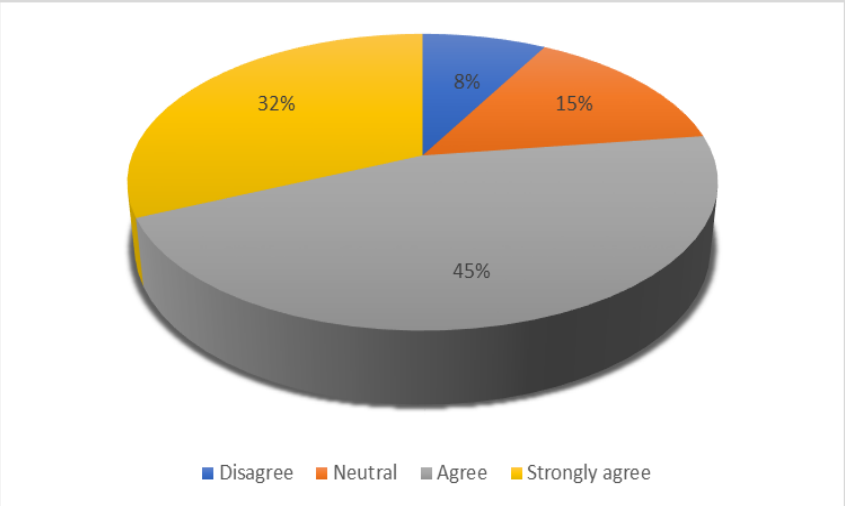
Out a total of 137 responses two is missing from system resulting in 135 responses remaining. Of the 135 responses 45% (n=61) agree that they are encouraged to start a new business as a career, while 32% (n=43) strongly agree, 15% (n=20) were neutral, 8% (n=11) disagree and 0% strongly disagree, as indicated in Table 4.26 and demonstrated in Figure 4.24.

Table 4-26: Learners responses on the encouragement of starting a new business as a career.

		Frequency	Percent %	Valid Percent %
Valid	Disagree	11	8.0	8
	Neutral	20	14.5	15
	Agree	61	44.9	45
	Strongly agree	43	31.2	32
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-24: Profile of participants been encouraged to starting a new business as a career.



Source: Researcher's own construction.

4.4 SECTION 3: ENTREPRENEURSHIP INTENTION

Question 1: I will start my own business after completing high school.

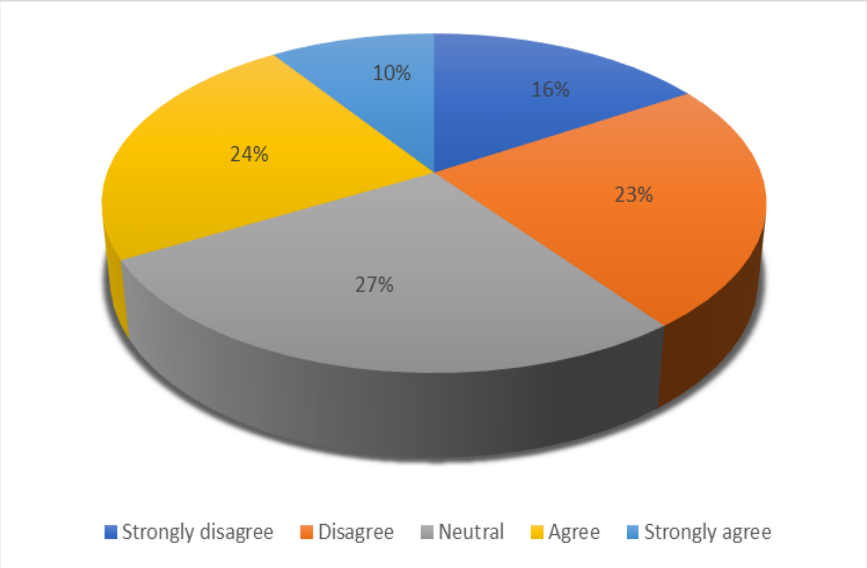
Out a total of 137 responses two are missing from system resulting in 135 responses remaining. Of the 135 responses 24% (n=32) agree that they will start their own businesses after completing high school, while 10% (n=13) strongly agree, 27% (n=37) were neutral, 23% (n=31) disagree and 16% (n=22) strongly disagree, as indicated in Table 4.27 and demonstrated in Figure 4.25.

Table 4-27: The frequency of learner on the statement: Learners starting their own businesses after completing high school.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	22	15.9	16
	Disagree	31	23.2	23
	Neutral	37	26.8	27
	Agree	32	23.2	24
	Strongly agree	13	9.4	10
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-25: Profile of participants starting their own businesses after completing high school.



Source: Researcher's own construction.

Question 2: I will start my own business after completing my tertiary education. e.g. degree.

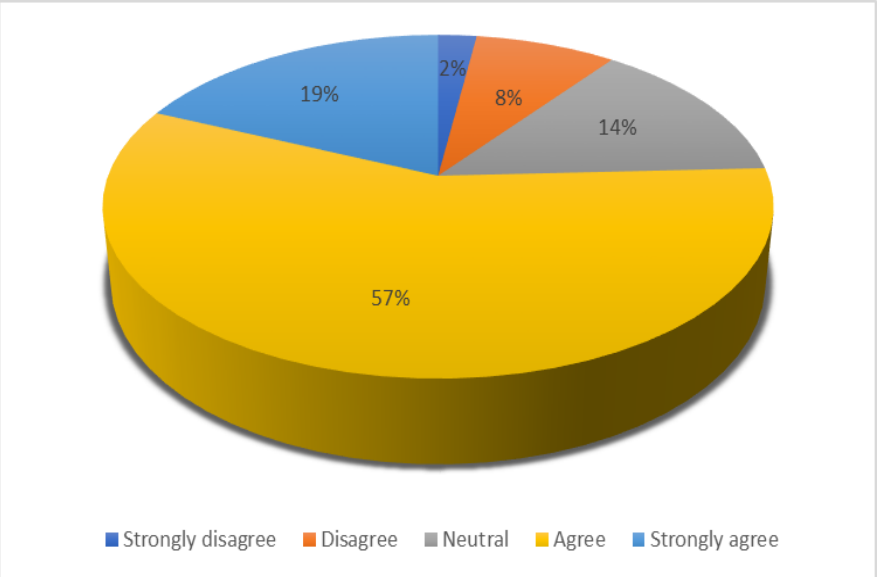
Out a total of 137 responses two are missing from system resulting in 135 responses remaining. Of the 135 responses 57% (n=77) agree that they will start their own businesses after completing tertiary education, while 19% (n=25) strongly agree, 14% (n=19) were neutral, 8% (n=11) disagree and 2% (n=3) strongly disagree, as indicated in Table 4.28 and demonstrated in Figure 4.26.

Table 4-28: Learners' frequent responses on learners starting their own businesses after completing tertiary education.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	3	2.2	2
	Disagree	11	8.0	8
	Neutral	19	13.8	14
	Agree	77	56.5	57
	Strongly agree	25	18.1	19
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-26: Learners' frequent responses on starting their own businesses after completing tertiary education.



Source: Researcher's own construction.

Question 3: My exposure to EMS as a subject has resulted in my intention to start a business.

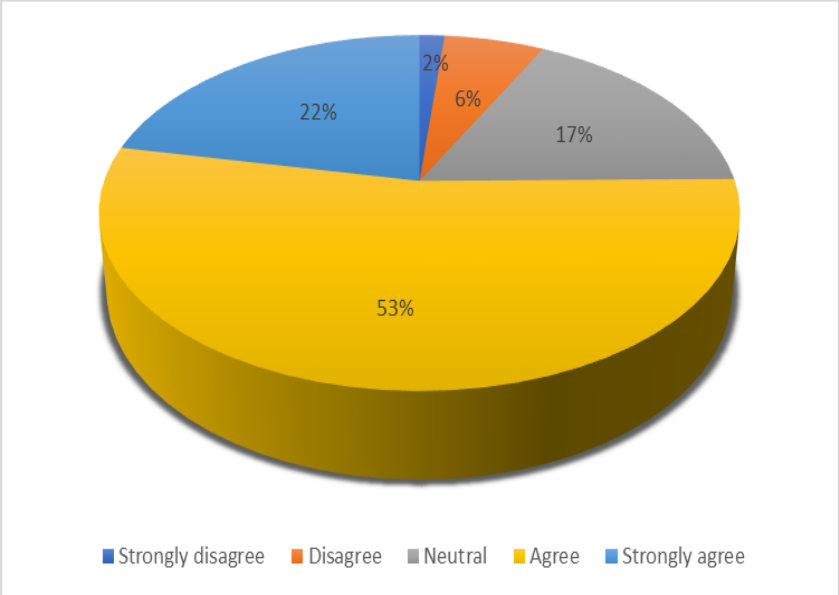
Out a total of 137 responses five are missing from system resulting in 132 responses remaining. Of the 132 responses 53% (n=70) agree that the exposure to EMS as a subject has resulted in the intention to start a business, while 22.0% (n=29) strongly agree, 17% (n=23) were neutral, 6% (n=8) disagree and 2% (n=2) strongly disagree, as indicated in Table 4.29 and demonstrated in Figure 4.27.

Table 4-29: Learners' frequent responses on learners' exposure to EMS has resulted in the intention to start a business.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	1.4	2
	Disagree	8	5.8	6
	Neutral	23	16.7	17
	Agree	70	51.4	53
	Strongly agree	29	21.0	22
	Total	132	96.4	100.0
Missing	System	5	3.6	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-27: Profile of learners' intention to start a business due to the exposure to EMS.



Source: Researcher's own construction.

Question 4: I have no intention to work for someone else after completing school but to work for myself.

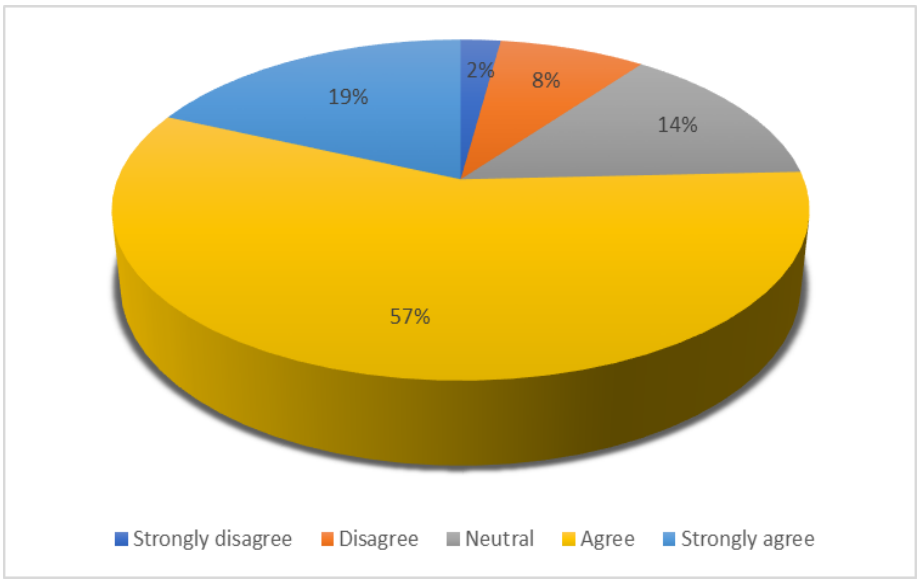
Out a total of 137 responses two are missing from the system resulting in 135 responses remaining. Of the 135 responses 57% (n=77) agree that they have no intention to work for someone else after completing school but to work for myself, while 19% (n=25) strongly agree, 14% (n=19) were neutral, 8% (n=11) disagree and 2% (n=3) strongly disagree, as indicated in Table 4.30 and demonstrated in Figure 4.28.

Table 4-30: Learners frequent responses on learners' intention for working for themselves after completing school.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	3	2.2	2
	Disagree	11	8.0	8
	Neutral	19	13.8	14
	Agree	77	56.5	57
	Strongly agree	25	18.1	19
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-28: Profile of participants intention working for themselves after completing school



Source: Researcher's own construction

Question 5: I intend to start a new business at some point in the future.

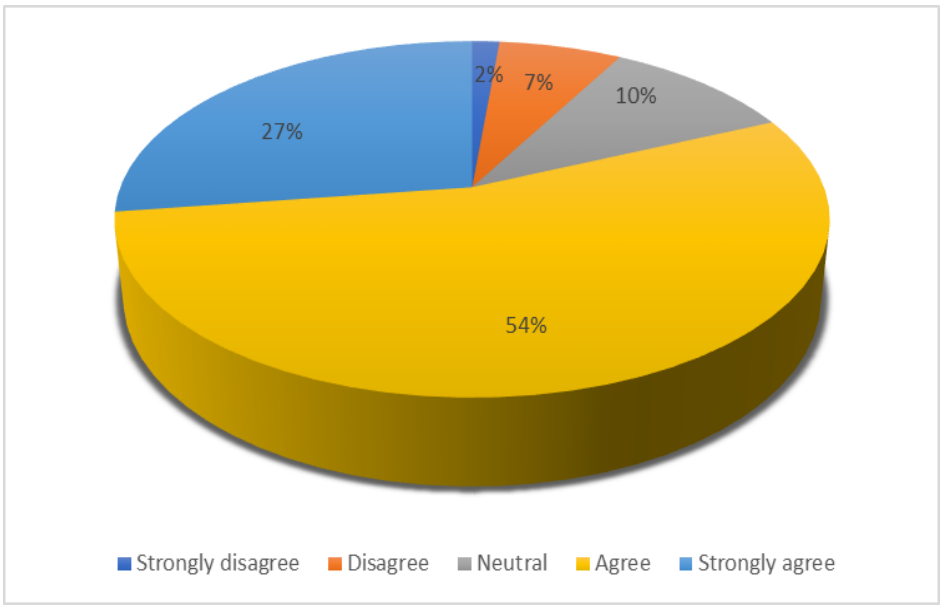
Out a total of 137 responses two are missing from the system resulting in 135 responses remaining. the 135 responses 54% (n=73) agree that they intend to start a new business at some point in the future, while 27% (n=37) strongly agree, 10% (n=14) were neutral, 7% (n=9) disagree and 2% (n=2) strongly disagree, as indicated in Table 4.31 and demonstrated in Figure 4.29.

Table 4-31: Learners' frequent responses on the intention to start a new business at some point in the future school.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	2	1.4	2
	Disagree	9	6.5	7
	Neutral	14	10.1	10
	Agree	73	53.6	54
	Strongly agree	37	26.8	27
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-29: Profile of participants intention to start a new business at some point in the future.



Source: Researcher's own construction.

Question 6: I have an intention to further my studies in entrepreneurship after high school.

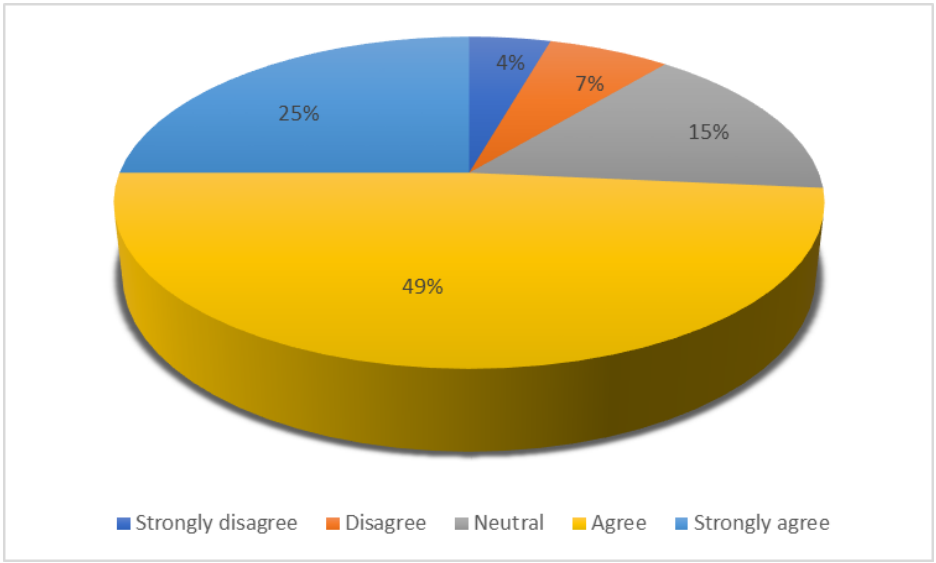
Out a total of 137 responses two are missing from the system resulting in 135 responses remaining. Of the 135 responses 49% (n=66) agree to have an intention to further their studies in entrepreneurship after high school, while 25% (n=34) strongly agree, 15% (n=21) were neutral, 7% (n=9) disagree and 4% (n=5) strongly disagree, as indicated in Table 4.32 and demonstrated in Figure 4.30.

Table 4-32: Learners frequent responses on the intention to further their studies in entrepreneurship after high school.

		Frequency	Percent %	Valid Percent %
Valid	Strongly disagree	5	4.3	4
	Disagree	9	6.5	7
	Neutral	21	15.2	15
	Agree	66	47.8	49
	Strongly agree	34	24.6	25
	Total	135	98.6	100.0
Missing	System	2	1.4	
Total		137	100.0	

Source: Researcher's own construction.

Figure 4-30: Profile of learners' intention to further their studies in entrepreneurship after high school.



Source: Researcher's own construction.

The next section represents the descriptive statistics of theoretical education, entrepreneurship knowledge and skills based of the 18 questions of entrepreneurship education.

4.5 DESCRIPTIVE STATISTICS OF THE ENTREPRENEURSHIP EDUCATION, KNOWLEDGE AND SKILLS

Table 4.33 represents the descriptive statistics of theoretical education, entrepreneurship knowledge and skills.

Table 4-33: Descriptive statistics of theoretical education, knowledge and skills

	Mean	Median	Std. Deviation	[1]Skewness	Kurtosis
In the Economic Management science class, we are taught about what entrepreneurship means.	4.19	4.00	0.768	-1.751	5.619
In the EMS class, we are taught how to draft a business plan.	3.84	4.00	0.866	-1.078	1.653
As learners we are sometimes required to come up with business ideas which we present in the EMS class.	3.90	4.00	0.921	-1.178	1.688
We sometimes conduct research from the internet about different aspects of entrepreneurship	4.10	4.00	0.614	-0.061	-0.353
We sometimes conduct research within the community about different aspects of entrepreneurship	3.90	4.00	0.836	-0.826	0.841
We are sometimes required to do entrepreneurship experimental activities in my EMS class.	3.73	4.00	0.987	-0.664	-0.154
We are sometimes required to sell some goods to fellow learners.	3.34	4.00	1.238	-0.424	-0.963
At my school we sometimes get presentations from successful entrepreneurs.	3.51	4.00	1.075	-0.638	-0.240
After learning about entrepreneurship, I am encouraged to start my own business.	3.93	4.00	0.894	-0.955	1.013
The content and the teaching of EMS at my school gives me confidence to engage other people about business.	3.89	4.00	0.846	-0.939	1.361
The content and the teaching of EMS at my school helped me to easily identify business opportunities.	3.90	4.00	0.905	-1.011	0.995
The content and the teaching of EMS at my school has encouraged me to put money into good use.	4.07	4.00	0.794	-0.847	1.214
Through the practical experiment projects of EMS at my school, I now know how to make money through entrepreneurship activities	4.02	4.00	0.765	-0.542	0.140
I will be able to start my own business using what I have been taught in my EMS class.	3.99	4.00	0.790	-0.916	1.480
From what I have been taught in my EMS class I will be able to resolve business related issues.	3.81	4.00	0.860	-1.070	1.648
What is being taught in EMS class has made me excited about entrepreneurship as a career.	3.92	4.00	0.841	-0.536	-0.154
I believe starting a new business is an attractive career.	4.01	4.00	0.841	-0.800	0.738
I am encouraged to start a new business as a career	4.01	4.00	0.876	-0.711	-0.050

[1] Std error of skewness =0.209; Std error of kurtosis =0.415

The results show that the skewness had negative values and ranged from a high of -0.061 to a low of -1.751 with a standard error of 0.209, and the range for kurtosis was 5.619 to -0.963 with a standard error of 0.415. As this data was within the values of ±2, for both the skewness and kurtosis, it can thus be regarded as being normally distributed, except for the first variable of kurtosis which was 5.619 which is therefore regarded as being abnormal. This means that data set had heavy tails or outliers, therefore data cannot be used as it is not normally distributed. Furthermore, the overall median was 4.

There was not much difference between the mean values that ranged from 4.19 to 3.34, with the highest mean being 4.19 (SD= 0.768) for variable "In the EMS class, we are taught about what entrepreneurship means". Followed by the variable "We sometimes conduct research from the internet about different aspects of entrepreneurship" with a mean score of 4.10 (SD= 0.614). The variable "The content and the teaching at my school has encouraged me to put money into good use" with a mean score of 4.07 (SD= 0.794). Variable "Through the practical experiment projects of EMS at my school, I now know how to make money through entrepreneurship activities" shows a mean score of 4.02 (SD= 0.765). However, the variable "I believe starting a new business is an attractive career" and "I am encouraged to start a new business as a career" show the same mean score of 4.01. Furthermore, the lowest mean score was for the variable "We are sometimes required to sell some goods to fellow learners" with a mean score of 3.34 (SD= 1.238), followed by variable "At my school we sometimes get presentations from successful entrepreneurs" showing a mean score of 3.51 (SD= 1.075). Variable "We are sometimes required to do entrepreneurship experimental activities in my EMS class" showed a mean score of 3.73 (SD= 0.987), meanwhile the variable "From what I have been taught in my EMS class I will be able to resolve business related issues" showed a mean score of 3.81 (SD= 860). Variable "In the EMS class, we are taught how to draft a business plan" shows a mean score of 3.84 (SD= 0.866).

4.5.1 Validity and reliability of entrepreneurship education

The Kaiser-Meyer-Olkin were used to test the validity and reliability for questions under the section of entrepreneurship education. The Kaiser-Meyer-Olkin measures sampling suitability for each variable, indicating the proportion of variance in variables (Hill, 2011). The lower the proportion, the more appropriate data is to factor analysis i.e. values close to 1.0 indicate that a factor analysis may be useful with the data, while value is less than 0.50 indicate the results of the factor analysis won't be very useful (Schmitt, 2011). Factor analysis is a statistical

method used to reduce data in frequent variables into just limited variables (Hill, 2011) it describes inconsistency among observed, interrelated variables in terms of a potentially lesser number of unnoticed variables called factors.

The Bartlett's test of sphericity and Chi-square was used to tests the appropriateness of data to factor analysis. Bartlett's test of sphericity is a statistical test for the existence of correlations between variables (Schmitt, 2011). Chi square is a test that measures the goodness of fit of data to the actual observed data (Diener-West, 2008). As such for factor analysis to work, there should be some relationships amongst variables (Hill, 2011), significance level values less than 0.05 indicate that a factor analysis may be useful with your data. Hence, a substantial Bartlett's test of sphericity is required, p<.005., with Chi square value much close to 1.0. Table 4.34 presents the KMO and Bartlett's test for entrepreneurship education

Table 4-34: KMO and Bartlett's test for entrepreneurship education.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.780
Bartlett's Test of Sphericity	Approx. Chi-Square	974.178
	df	153
	Sig.	.000

Source: Researcher's own construction

KMO and Bartlett's test for entrepreneurship education which was 0.780 and a significance with a p-value of <0.000, a df of 153 and approx. Chi-square 974.178. Confirming that factor analysis for entrepreneurship education was useful with the data. Table 4.35 illustrates rotated component matrix where a total of 18 entrepreneurship education components were used and reduced to 5 constructs.

4.6 FACTORS OF ENTREPRENEURSHIP EDUCATION USED IN THE STUDY

Factor analysis was used to reduce data in frequent variables into just limited variables whereby a total of 18 entrepreneurship education components were used and reduced to 5 constructs. This was necessary to identify and group frequent variable together for easy analysis. The results are presented in Table 4.35.

Table 4-35: Rotated component matrix.

Questions						Components
Easily identifying business opportunities. (Q11)	0,803	0,192	0,141	0,058	0,031	Entrepreneurship skills
Being able to start own business. (Q14)	0,732	0,220	-0,034	0,246	0,193	
Having confidence to engage other people about business. (Q10)	0,730	0,307	0,242	0,082	-0,168	
Being able to resolve business related issues. (Q15)	0,714	-0,046	0,195	0,233	0,169	
Knowing how to make money through entrepreneurship activities. (Q13)	0,610	0,294	0,322	-0,153	0,228	
Believe that starting a new business is an attractive career. (Q17)	0,013	0,858	0,032	0,034	0,148	Entrepreneurship knowledge
Being encouraged to start a new business as a career. (Q18)	0,241	0,791	-0,015	-0,051	0,102	
Being excited about entrepreneurship as a career. (Q16)	0,266	0,654	0,035	0,278	0,288	
Being encouraged to put money into good use. (Q12)	0,237	0,619	0,254	0,104	-0,319	
Conducting entrepreneurship experimental activities (Q6)	0,193	0,144	0,740	0,058	0,270	Experiential Learning
Selling goods to fellow learners. (Q7)	0,002	-0,138	0,721	0,321	0,040	
Learners come up with business ideas and presenting them. (Q3)	0,251	0,254	0,643	0,214	0,196	
Getting presentations from successful entrepreneurs. (Q8)	0,480	-0,004	0,583	0,214	0,004	
Being encouraged to start my own business. (Q9)	0,402	0,431	0,482	-0,327	-0,091	
Taught how to draft a business plan. (Q2)	0,160	-0,072	0,308	0,774	0,076	Theoretical education
Taught about what entrepreneurship is. (Q1)	0,165	0,229	0,150	0,663	0,052	
Conducting research within the community about different aspects of entrepreneurship. (Q5)	0,116	0,165	0,295	-0,081	0,754	Exploration of Entrepreneurship
Conducting research from the internet about different aspects of entrepreneurship (Q4)	0,105	0,055	0,075	0,368	0,605	

Source: Researcher's own construction

The factor loading of the constructs were between 0.610 to 0.803 for entrepreneurship skills, 0.619 to 0.858 for entrepreneurship knowledge, 0.482 to 0.740 for experiential learning, 0.663 to 0774 for theoretical education and 0.605 to 0.754 for exploration of entrepreneurship. Factor analysis may be useful with the data for values from 0.5 to 1.0 (Schmitt, 2011). Table 4.36 presents the factor analysis results for the five constructs.

Table 4-36: Results of factor analysis and reliability on entrepreneurship education.

Factors	No of items	Factor loading	% Variance	Eigen values	Cronbach alpha
Entrepreneurship skills (EDU1)	5	0.610- 0.803	34.240	6.093	0,834
Entrepreneurship knowledge (EDU2)	4	0.619- 0.858	11.710	2.140	0,786
Experiential Learning (EDU3)	5	0.482- 0.740	7.842	1.402	0,760
Theoretical education (EDU 4)	2	0.663- 0.774	6.704	1.203	0,689
Exploration of Entrepreneurship (EDU 5)	2	0.605- 0.754	5.568	1.033	0,429

Source: Researcher's own construction.

The components of entrepreneurship education were reduced to five constructs, namely, entrepreneurship skills (EDU1); entrepreneurship knowledge (EDU2; experiential learning (EDU3); theoretical education (EDU4) and exploration of entrepreneurship (EDU5). The total variances of the constructs as indicated in Table 4.29 were ranging from a high of 34.240% for entrepreneurship skills to a low of 5.568% for exploration of entrepreneurship. The eigenvalues ranging from 6.093 to 1.033 show a huge difference between entrepreneurship skills and experiential learning, theoretical education, exploration of entrepreneurship and exploration of entrepreneurship. The eigenvalue was used to check degree of how much of the variance of the pragmatic variables a factor describes. Any factor with an eigenvalue ≥1 describes more variance than a single pragmatic variable (Delchambre, 2014).

The Cronbach alpha yielded an excellent result for entrepreneurship skill with a value of 0.834 to poor results of exploration of entrepreneurship $\alpha = 0.429$. Furthermore, entrepreneurship skills show the highest factor loading of 0.803 to 0.610 and the lowest factor loading was for experiential learning with 0.740 to 0.482. Cronbach's alpha measured reliability i.e. how closely related a set of items are as a group (Taber, 2017), a score of more than 0.7 is usually

okay. EDU1 represented Entrepreneurship skills which was found to be reliable with α = 0.834, then EDU2 represent Entrepreneurship knowledge with α = 0.786. EDU3 and EDU4 represented experimental learning and entrepreneurship education, respectively. EDU 5 represented exploration of entrepreneurship which had low Cronbach alpha (α = 0.429) and thus was not included in the analysis due to the lack of reliability.

4.7 LEVELS OF THEORETICAL EDUCATION, LEARNING, KNOWLEDGE, SKILLS AND INTENTION

Table 4.37 presents the results of the one-sample t-test for theoretical education, learning, knowledge, skills and intention.

Table 4-37: One-sample t- test of entrepreneurship education, learning, knowledge, skills and intention.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Entrepreneurship skills (EDU1)	132	3.9394	.63628	.05538
Entrepreneurship knowledge (EDU2)	133	3.9906	.66030	.05725
Experiential Learning (EDU3)	127	3.6677	.73126	.06489
Theoretical education (EDU4)	137	4.0036	.71614	.06118
Exploration of Entrepreneurship	133	3.6842	.66990	.05809

One-Sample Test						
	Test Value = 3.4					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Entrepreneurship skills (EDU1)	9.740	131	.000	.53939	.4298	.6490
Entrepreneurship knowledge (EDU2)	10.315	132	.000	.59060	.4773	.7039
Experiential learning (EDU3)	4.126	126	.000	.26772	.1393	.3961
Theoretical education (EDU4)	9.866	136	.000	.60365	.4827	.7246
Exploration of entrepreneurship	4.893	132	.000	.28421	.1693	.3991

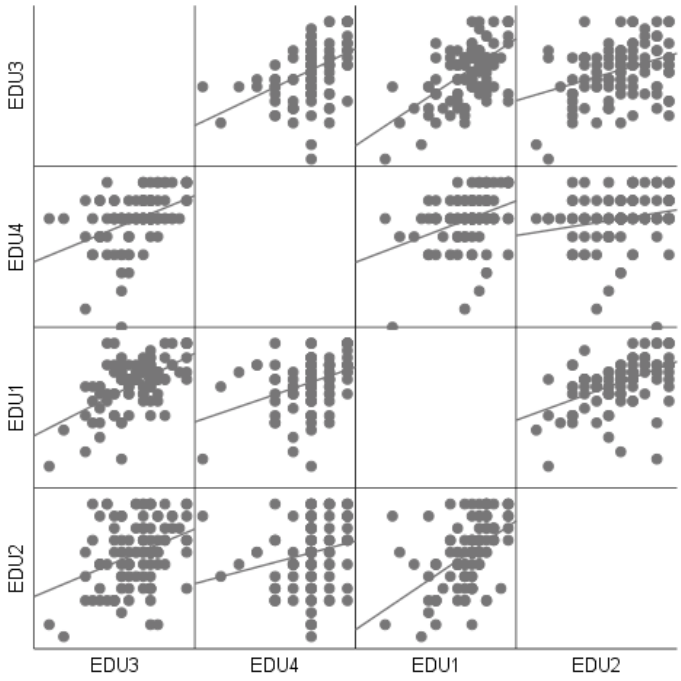
Source: Researcher's own construction

The mean values of these constructs in Table 4.37, namely; entrepreneurship skills; experiential learning; theoretical education; entrepreneurship knowledge; exploration of entrepreneurship show not much difference and ranged from a high of 4.0036 to a low of 3.6677. The highest mean score was for theoretical education with a mean score of 4.0036 (SD= 0.71614) with a standard error of 0.06118, followed by a mean score of 3.9906 (SD= .66030) for construct entrepreneurship knowledge with a standard error of 0.05725. Furthermore, the lowest mean score was for variable experimental learning with a mean score of 3.6677 (SD= .73126) and a standard error of 0.06489, intention with a mean score of 3.6842 (SD= .66990) and a standard error of 0.05809. The test results show that there was a higher difference in the statistical significance for all the constructs $p < .05$ than the hypothesised mean of 3.4. The next section is assessing influence between the four dimensions of entrepreneurship education which are entrepreneurship skills, entrepreneurship knowledge, theoretical education and experimental learning. The section also answers the main objective of the study of assessing the effectiveness of entrepreneurship education in high school learners.

4.8 THE EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN HIGH SCHOOL LEARNERS

The scatter plot of entrepreneurship education was to understand the relationship between the four dimensions of entrepreneurship education namely: entrepreneurship skills, entrepreneurship knowledge, theoretical education and experimental learning. As depicted in Figure 4.31.

Figure 4-31: Scatterplot for the relationship between the four dimensions of entrepreneurship education.



Source: Researcher's own construction.

There is a positive correlation between variables explicitly entrepreneurship skills (EDU1), entrepreneurship knowledge (EDU2), theoretical education (EDU4) and experimental learning (EDU3). The next section presents the Pearson correlation between theoretical education, experimental learning entrepreneurship skills and knowledge.

4.9 PEARSON CORRELATION OF THEORETICAL EDUCATION, EXPERIMENTAL LEARNING ENTREPRENEURSHIP SKILLS AND KNOWLEDGE

Table 4-38 presents the correlation between experiential learning, theoretical education, entrepreneurship skills and entrepreneurship knowledge.

Table 4-38*:* Correlation of theoretical education, experiential learning, entrepreneurship knowledge and skills.

		Experiential learning	Theoretical education	Entrepreneurship skills	Entrepreneurship knowledge
Experiential learning	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	127			
Theoretical education	Pearson Correlation	.473**	1		
	Sig. (2-tailed)	0,000			
	N	127	137		
Entrepreneurship skills	Pearson Correlation	.591**	.424**	1	
	Sig. (2-tailed)	0,000	0,000		
	N	123	132	132	
Entrepreneurship knowledge	Pearson Correlation	.334**	.234**	.503**	1
	Sig. (2-tailed)	0,000	0,007	0,000	
	N	124	133	129	133

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's own construction.

The results of the correlation presented in Table 4.38 show that the four dimensions of entrepreneurship education have a significant relationship with each other $p<.05$. Entrepreneurship skills had a strong positive relationship with experiential learning $r (123) =0.591$, $p<0.01$. This relationship was strong based on the guidelines of Pallant, (2010), which state that the correlation coefficient value shall be between ±2, where values closer to +1.0 are regarded as having a stronger relationship and 0.00 shows no relationship. Furthermore, entrepreneurship knowledge did not have a strong positive relationship with experiential learning, $r (124) = 0.334$, $p<0.01$. While theoretical education (also had a positive and significant relationship with experiential learning, $r (127) = 0.473$, $p<0.01$. The results confirm

that entrepreneurship education is effective in high school learners. The next section presents the linear regression between experiential learning (EDU3) and theoretical education (EDU4) with entrepreneurship knowledge (EDU2). The next section presents the hypothesis testing for the study using Pearson correlation and simple regression analysis.

4.10 HYPOTHESIS TESTING

The purpose of hypothesis testing is to determine whether there is enough statistical evidence in favour of the claims. The claims to be tested in this section are as follows:

- The theoretical entrepreneurship education (H1a) and experiential learning (H1b) in high schools has an influence on the development of entrepreneurship knowledge.
- The entrepreneurship theoretical education (H2a) and experiential learning (H2a) in high schools has an influence on the development of entrepreneurship skills.
- The entrepreneurship theoretical education (H3a) and experiential learning (H3b) in high schools has an influence on the learners' intention towards entrepreneurship careers.

4.10.1 The influence of entrepreneurship theoretical education and experiential learning on the development of entrepreneurship knowledge

Hypothesis 1: The theoretical entrepreneurship education (H_{1a}) and experiential learning (H_{1b}) in high schools has an influence on the development of entrepreneurship knowledge.

The linear regression between experiential learning (EDU3) and theoretical education (EDU4) with entrepreneurship knowledge (EDU2) is presented in Table 4.39.

Table 4-39: Regression for theoretical education, experiential learning and entrepreneurship knowledge.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.337[a]	.114	.099	.61233	1.747

a. Predictors: (Constant), EDU4, EDU3

b. Dependent Variable: EDU2

Source: Researcher's own construction.

The results show the R-square of 0.114 and an adjusted R-square of 0.099, while the standard error of the estimate is 0.61233 and the Durbin-Watson is 1.747. The ANOVA results for theoretical education, experiential learning and entrepreneurship knowledge are presented in Table 4.40.

Table 4-40: ANOVA results for theoretical education, experiential learning and entrepreneurship knowledge

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.815	2	2.907	7.754	.001[b]
	Residual	45.368	121	.375		
	Total	51.183	123			

a. Dependent Variable: EDU2

b. Predictors: (Constant), EDU4, EDU3

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.809	.351		7.994	.000		
	EDU3	.277	.086	.312	3.222	.002	.780	1.281
	EDU4	.044	.090	.047	.490	.625	.780	1.281

a. Dependent Variable: EDU2

Source: Researcher's own construction.

The mean score of the regression was significant with a value of 9.044, $p<0.05$ with a df of 2. The Durbin-Watson statistic value are amongst 0 and 4 (Chen, 2016). A value of 2.0 implies that there is no autocorrelation detected in the sample (Ramenah, Casin, Ba, Benne & Tanougast, 2018), while values between 0 and 2 suggests positive autocorrelation and values between 2 to 4 suggests negative autocorrelation. The results of the four dimensions of entrepreneurship education show a significant relationship between EDU2 and EDU3 and with a standardised coefficient, $\beta= 0.277$, $p=0.002$. There was no significant prediction with EDU4, $\beta= 0.044$, $p = .490$. The results confirm what is stated in hypothesis 1, especially with a significant influence shown between experiential learning and entrepreneurship skills. The null hypothesis which states that the theoretical entrepreneurship education and experiential learning in high schools has an influence on the development of entrepreneurship knowledge

is accepted. Especially with a significant influence shown between experiential learning and entrepreneurship knowledge. The next section represents simple regression analysis of theoretical education, experiential learning and entrepreneurship skills. The section also tests for the second hypothesis of the study.

4.10.2 The influence of entrepreneurship theoretical education and experiential learning on the development of entrepreneurship skills

Hypothesis 2: The entrepreneurship theoretical education (H_{2a}) and experiential learning (H_{2a}) in high schools has an influence on the development of entrepreneurship skills.

Table 4.41 presents the regression analysis between experiential learning and theoretical education with entrepreneurship skills.

Table 4-41: Regression analysis of theoretical education, experiential learning and entrepreneurship skills.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDU4, EDU3[b]	.	Enter

a. Dependent Variable: EDU1

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.604[a]	.364	.354	.51287	1.986

a. Predictors: (Constant), EDU4, EDU3

Source: Researcher's own construction.

The linear regression between experiential learning (EDU3) and theoretical education (EDU4) with entrepreneurship skills (EDU1) is presented in Table 4.41. The model summary shows a R-squared of 0.364 and adjusted R- square of 0.354, with the standard error for the estimate of 0.51287. Furthermore, the Durbin-Watson was 1. 986. The higher the R-squared and adjusted R-squared the better model fit to data. The results show a low R-squared and adjusted R-squared, showing low significant variables. This could be due to unpredictability of people. ANOVA test is done to further analyse the results. Table 4.42 presents the ANOVA results for theoretical education, experiential learning and entrepreneurship skills.

Table 4-42: ANOVA results for theoretical education, experiential learning and entrepreneurship skills.

1		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.089	2	9.044	34.384	.000[b]
a. Dependent Variable: EDU1	Residual	31.565	120	.263		
	Total	49.653	122			

b. Predictors: (Constant), EDU4, EDU3

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients		
1		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.697	.307		5.537	.000
a. Dependent Variable: EDU1	EDU3	.467	.072	.529	6.479	.000
	EDU4	.130	.077	.137	1.682	.095

Source: Researcher's own construction.

The regression analysis results show a significant relationship between entrepreneurship skills (EDU1) and experiential learning (EDU3) and with a standardised coefficient, β= 0.467, p=0.001. There was no significant prediction with theoretical education (EDU4), β= 0.130, p

= .095. The null hypothesis which states that the entrepreneurship theoretical education and experiential learning in high schools has an influence on the development of entrepreneurship skills is accepted. Especially with a significant influence shown between experiential learning and entrepreneurship skills. The next section discusses the descriptive statistics of entrepreneurship education and entrepreneurship intention. This includes the validity and reliability testing for entrepreneurship intention.

4.10.3 The influence of entrepreneurship education on entrepreneurship intention

Hypothesis 3: The entrepreneurship theoretical education (H_{3a}) and experiential learning (H_{3b}) in high schools has an influence on the learners' intention towards entrepreneurship careers.

Table 4.43 shows the results of entrepreneurship intention with its six variables that were developed to profile it.

Table 4-43: Descriptive statistics of entrepreneurship intention.

	Mean	Median	Std. Deviation	Skewness	Kurtosis
I will start my own business after completing high school.	2.87	3.00	1.229	0.024	-0.977
I will start my own business after completing my tertiary education. E.g. 1 degree.	3.84	4.00	0.883	-1.083	1.515
My exposure to Economic Management and science as a subject has resulted in my intention to start a business.	3.89	4.00	0.862	-0.890	1.143
I have no intention to work for someone else after completing school but to work for myself.	3.77	4.00	0.945	-0.721	0.402
I intend to start a new business at some point in the future.	4.02	4.00	0.854	-1.147	1.863
I have an intention to further my studies in entrepreneurship after high school.	3.85	4.00	1.000	-1.023	0.912

Std error of skewness =0.210; Std error of kurtosis =0.417

Source: Researcher's own construction.

The results show an overall median of 4 except for VAR1 showing a median value of 3. The mean values ranged from a high of 4.02 to a low of 2.87. The highest mean value was 4.02

(SD= 0.854) for variable “I intend to start a new business at some point in the future”, followed by mean 3.89 (SD= 0.862) for variable “My exposure to Economic Management and science as a subject has resulted in my intention to start a business”, and variable “I have an intention to further my studies in entrepreneurship after high school” with a mean score of 3.85 (SD= 1.000). Furthermore, the lowest mean value was for variable “I will start my own business after completing high school” with a mean score of 2.87 (SD= 1.229) and variable “I have no intention to work for someone else after completing school but to work for myself” with a mean value of 3.77 (SD= 0.945). meanwhile variable “I will start my own business after completing my tertiary education. E.g. 1 degree” showed a mean score of 3.84 (SD= 0.883).

The range of skewness was from 0.024 to -1.147 with a standard error of 0.210, and the range for kurtosis was 1.863 to -0.977 with a standard error of 0.417. As this data was within the values of ±2, for both the skewness and kurtosis, it can thus be regarded as being normally distributed.

4.10.4 Validity and reliability testing for entrepreneurship intention

The KMO and Bartlett’s results of entrepreneurship intention are presented in Table 4.44.

Table 4-44: KMO and Bartlett’s test for entrepreneurship intention

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.826
Bartlett's Test of Sphericity	Approx. Chi-Square	223.567
	df	15
	Sig.	.000

Source: Researcher’s own construction.

The KMO and Bartlett’s results in Table 4.44 was 0.826 with a significance of a p-value of <0.000, a df of 15 and approx. Chi-square of 223.567. Confirming that factor analysis for entrepreneurship intention was useful with the data in line with Section 4.5.1. Table 4.45 represents extracted variance, loading and Eigen values for entrepreneurship intention.

Table 4-45: Extracted variance, loading and Eigen values for entrepreneurship intention.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Starting own business after completing high school	2.967	49.447	49.447	2.967	49.447	49.447
Starting own business after completing my tertiary education	.937	15.614	65.062			
Exposure to EMS resulted in the intention to start a business	.766	12.771	77.833			
Intention for self-employment	.587	9.775	87.608			
Intention for starting a business in future	.386	6.438	94.046			
Intention for furthering studies in entrepreneurship after high school	.357	5.954	100.000			

Extraction Method: Principal Component Analysis.

Source: Researcher's own construction.

The analysis illustrated in Table 4.45 extracted only one factor from the six variables, with a total of 49.447%, showing the total initial eigenvalues of 2.967. Table 4.46 represents the reliability for entrepreneurship intention which consisted of six variables, as confirmed by the principal components analysis (PCA).

Table 4-46: Reliability testing for entrepreneurship intention

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.761	.782	6

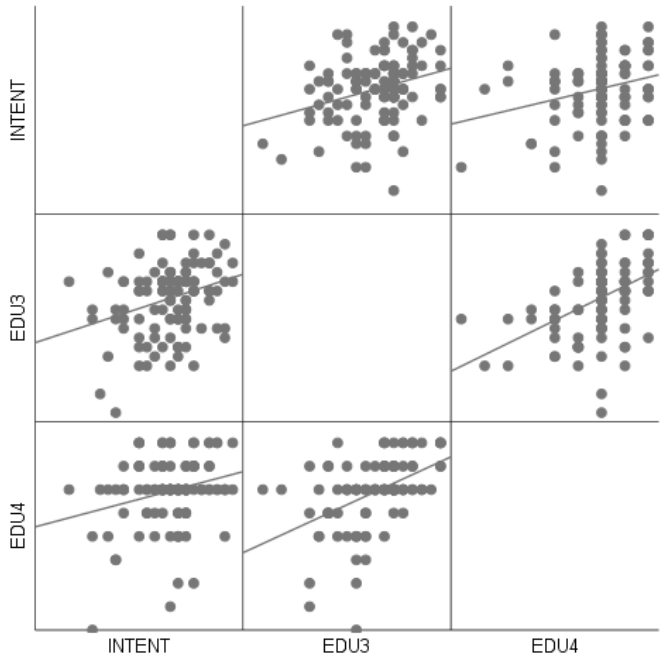
Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.22	15.497	3.937	6

Source: Researcher's own construction

The mean value illustrated in Table 4.46 was 22.22 (SD= 3.937) with the variance of 15.497. The Cronbach's Alpha coefficient was 0.761 while the Cronbach's Alpha based on standardised items was 0.782. Scatter plots were used to check how entrepreneurship intention influenced theoretical and experimental learning. Figure 4.32 presents the scatter plot between entrepreneurship intention, theoretical education and experimental learning.

Figure 4-32: Scatterplot presenting entrepreneurship intention and theoretical education and experimental learning**.**



Source: Researcher's own construction

There is a clear correlation between theoretical education (EDU4), experimental learning (EDU3) and intention, a significant correlation is shown between experimental learning and intention. The next section represents the correlation test between intention, experiential learning and theoretical education.

4.10.5 Pearson correlation of entrepreneurship intention

The correlation between intention, experiential learning and theoretical education is presented in Table 4.47.

Table 4-47: Correlation theoretical education, experiential learning and entrepreneurship intention

		Intention	EDU3	EDU4
Entrepreneurial intention	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	133		
Theoretical education (EDU3)	Pearson Correlation	.301**	1	
	Sig. (2-tailed)	.001		
	N	123	127	
Experiential learning (EDU4)	Pearson Correlation	.287**	.473**	1
	Sig. (2-tailed)	.001	.000	
	N	133	127	137

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's own construction.

The results illustrated in Table 4.47 show that the theoretical education and experimental learning have a significant relationship with intent $p<0.05$. Furthermore, experiential learning had a strong positive relationship with intent $r(123) = 0.301$, $p<0.05$, while the relationship between theoretical education and intent was not as strong but positive $r(133) = 0.287$, $p<0.05$. The next section represents the simple regression analysis of entrepreneurship intention on theoretical education and experiential learning.

4.10.6 Simple regression analysis of entrepreneurship intention on theoretical education and experiential learning

Table 4-48: Regression theoretical education, experiential learning and entrepreneurship intention.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.325[a]	.106	.091	.63148	1.817

a. Predictors: (Constant), EDU4, EDU3

b. Dependent Variable: INTENTION

Source: Researcher's own construction.

The model summary in Table 4.48 shows a R-square of .106 and adjusted R-square of .091, with the standard error for the estimate of .63148. Furthermore, the Durbin-Watson was 1.817. The results show a low R-squared and adjusted R-squared, showing low significant variables. This could be due to unpredictability of people. ANOVA test is done to further analyse the results. Table 4.49 presents the ANOVA results for theoretical education, experiential learning and entrepreneurship intention.

Table 4-49: ANOVA results for theoretical education, experiential learning and entrepreneurship intention.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.658	2	2.829	7.094	.001[b]
	Residual	47.852	120	.399		
	Total	53.509	122			

a. Dependent Variable: INTENT

b. Predictors: (Constant), EDU4, EDU3

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.370	.363		6.526	.000		
	EDU3	.215	.090	.235	2.397	.018	.774	1.291
	EDU4	.131	.093	.139	1.418	.159	.774	1.291

a. Dependent Variable: INTENT

Source: Researcher's own construction

The dimensions results illustrated in Table 4.49 show a significant relationship between intention and experiential learning (EDU3), with an unstandardized coefficient, β= 0.215, p=.018. However, there was no significant relationship between theoretical education (EDU4) and intention, β= 0.131, p= <.159. The null hypothesis which states that the entrepreneurship theoretical education and experiential learning in high schools has an influence on the learners' intention towards entrepreneurship careers is accepted. Especially with a significant positive influence shown between experiential learning and intention. The conclusion of the chapter is presented in the next section.

4.11 CONCLUSION

This chapter presented an analysis and an interpretation the data collected for the study. A total of 300 questionnaires were distributed to a total of 15 high schools across the city of Tshwane in the townships of Mamelodi, Attrigdeville and Soshanguve. A response rate of 57% was received with the most respondents being female; Mamelodi township had the highest responses of the three townships with a response rate of 68.5%. The following constructs emerged from the factor analysis, namely, entrepreneurship skills; entrepreneurship knowledge; experiential learning; theoretical education and exploration of entrepreneurship. Based on the outcome of the data analyses both objectives and hypothesis of the study were accepted especially a significant influence shown by experiential learning on entrepreneurship skills, knowledge and intention. The constructs are discussed in the next chapter.

CHAPTER 5

DISCUSSION OF THE FINDINGS

5.1 INTRODUCTION

The main purpose of the study was to assess the effectiveness of entrepreneurship education in high school learners in the City of Tshwane, South Africa. As explained in Chapter 1, Section 1.3, the main objective of the study was to assess the effectiveness of entrepreneurship education in high school learners in the City of Tshwane, South Africa. The two secondary objectives were namely to:

1. determine whether entrepreneurship education in high schools is effective in the development of entrepreneurship knowledge and skills;
2. determine whether entrepreneurship education positively influences learners' intention towards entrepreneurship careers.

Those objectives were investigated using a quantitative method explained in Chapter 3, Section 3.3. This resulted in the collection of data using a survey at the high schools in the three townships of Tshwane, namely, Mamelodi, Soshanguve and Atteridgeville. The collected data was analysed, and the findings were presented in Chapter 4. Eighteen entrepreneurship education components were used and reduced to 5 constructs and tested for correlation amongst them and entrepreneurship intention. Reliability and validity were tested on the five constructs and on entrepreneurship intention. The three study null hypotheses of the study were accepted confirming the objective of the study. In this chapter, the findings are discussed, compared and contrasted with the literature, as synthesised and discussed in chapter 2. Section 5.2 discusses the credibility of the study.

5.2 RELIABILITY AND VALIDITY OF THE STUDY

The reliability and validity of the findings of the study were discussed. Three aspects were evaluated to confirm the reliability and validity of the findings, namely, the design of the study, the relevance of the sample and the adequacy of the sample size. Firstly, the design of the study was tested for reliability and validity. It was critical that the design of the study be aligned with the purpose of the study. The design of the study was tested for reliability and validity using KMO and Bartlett's test. Overall, the study assessed the influence of entrepreneurship education which was based on both theoretical and experimental learning. This was investigated through establishing whether there were positive and significant relationships between entrepreneurship education with the entrepreneurship skill, knowledge and intention.

As the focus of the study was relation-based, it was critical that the quantitative research approach was employed as it would make it possible to analyse the significance, direction and strength of the relationship using correlation tests (Pallant, 2010). Descriptive designs based on correlational studies was appropriate to test the relationship between variables (theoretical education, experimental learning, entrepreneurship knowledge, skills and intention) in the study (Leedy and Ormrod, 2015). This is because descriptive designs measure two or more relevant variables and assess a relationship between them. In addition, the quantitative method allowed the researcher to assess how much of the entrepreneurship education can explain the entrepreneurship knowledge, skill and intention.

Secondly, the relevance of the sample was tested for validity and reliability. This was achieved through the inclusion criterions that were incorporated to ensure that the respondents were the relevant target group for the study. The study tested for Cronbach Alpha coefficient, where the acceptable level of reliability was 0.7 and higher. Validity of the study was conducted using Principal Component Analyses This was done by ensuring that all participants were in grade 12 and participants who were not grade 12 learners were excluded from the study. In addition, to ensure that the study can effectively assess the effect of entrepreneurship education, a qualifying question was included in the beginning of the questionnaire (refer to Annexure B).

Lastly, the validity for the adequacy of the sample size was tested using KMO. This was confirmed with Gpower 3.0 using post hoc analyses to compute archived power in a given percentage error, sample size and effect size. For total sample size of 137 with $\alpha = 0.05$, effect size of 0.1 and two predictors, the statistical power (1- β err prob) 0.9167 was achieved. The output statistical power of 91.6% was higher than that of the normally accepted statistical power of 80% for statistical analyses. This confirmed the adequacy of the sample size as illustrated in figure 3.2 section 3.4.3.

Further confirmations were evident during analyses, where, for example, the Kaiser Mayer-Olkin measure of sampling adequacy (KMO) were 0.780 for entrepreneurship education knowledge and skills and 0.826 for entrepreneurship intention.

Based on the above, it could be concluded that the study was credible, and all the constructs as revealed in Chapter 4, Sections 4.5 to Section 4.6 except exploration of entrepreneurship. Exploration of entrepreneurship was not reliable. Hence, it was excluded from further analysis.

5.3 THE EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN HIGH SCHOOL LEARNERS

The main objective of the study was to determine the influence of entrepreneurship education in high school learners. Entrepreneurship education is critical to improve and augment general competencies (Lackeus, 2015 & Sánchez, 2013:5). It is frequently seen as a response to the increasingly globalised, uncertain and complex world, requiring all people and organisations in society to be increasingly equipped with entrepreneurship competencies (Gibb, 2002). Against this backdrop, it is prudent to assess the effectiveness Entrepreneurship education in high school learners. Against this backdrop, it is prudent to determine its influence on knowledge and skills development.

The research investigated the effectiveness of entrepreneurship education using theoretical education and experimental learning. The results of the study have revealed that there were high levels of entrepreneurship education (Mean = 4.00, SD = 0.716). This means that in general, the respondents agreed with the statements posed to them on the entrepreneurship education. In particular, there was a strong agreement with 61% of respondents agreeing and 32% strongly agreeing that in their EMS class, the learners were taught about what entrepreneurship means. Indicating that the use of social science subjects in South Africa is similar to other countries, as it seemed as common locus of entrepreneurship education in many countries, with a majority of them offering entrepreneurship education as a compulsory subject (EACEA, 2016). The content of entrepreneurship education was critical, as Drnovsˇek, Wincent and Cardon (2009) explained that entrepreneurship has been cited as a key factor to improving economic growth and facilitating more job opportunities for young people in developing countries. The one sample t-test from the current research findings confirmed that the entrepreneurship education was useful, with the entrepreneurship education significantly higher than the hypothesised mean of 3.4 (positive), $t(136) = 9.866$, $p<.05$.

The investigation of entrepreneurship education using experimental learning, Müller (2011) and Roberts (2012) indicated that experiential learning is the most effective approach by developing entrepreneurship skills through interaction focused on real business problems. This

is supported by Ubulom and Enyoghasim (2012), advancing that experiential learning has been introduced as exposing learners to situations where they can gain numerous different experiences and develop skills for entrepreneurship.

According to the data analysis they are there were high levels of experimental learning (Mean = 3.67, SD = 0.731) in South African High schools. This means that in general, the respondents in this study agreed with the statements posed to them about the experimental learning. In particular, there was a strong agreement that in the EMS class learners were taught entrepreneurship through experimental learning. Learners were sometimes required to do entrepreneurship experimental activities. As a result, through experiential learning learners developed skills that enable them to address changing circumstances in business, due to it being task-oriented focusing on real business problems (Rocha, Carneiro & Varum, 2015; Ubulom & Enyoghasim, 2012). The findings from the one sample t-test confirmed that experiential learning was taking place, with experiential learning significantly higher than the hypothesised mean of 3.4 (positive), $t(126) = 4.216$, $p<.05$.

Hypothesis 1: *The theoretical entrepreneurship education (H_{1a}) and experiential learning (H_{1b}) in high schools has an influence on the development of entrepreneurship knowledge.*

Entrepreneurship knowledge is characterised as being theoretical, targeted to high school and tertiary students (Valerio, Parton & Robb, 2014). The programmes are beyond the normal classroom teaching, where learners, linked through a research centre, use knowledge extracted from their research to set up business ventures (Morales & Marquina, 2013). Furthermore, entrepreneurship knowledge is formed through the experiences gained from individual experiences and conservational experiences (Millwood, 2013). As a result, learners build new knowledge and understanding from what they previously know and have confidence in (Kolb, 2005). Confirming a positive relationship between theoretical education, experiential learning and entrepreneurship knowledge.

The results of the current study illustrate that there were high levels of entrepreneurship knowledge (Mean = 3.99, SD = 0.660) in South African schools. This means that in general, the respondents were agreeing with the statements posed to them about the entrepreneurship knowledge. In particular, there was a strong agreement that what is being taught in EMS class

has made respondents excited about entrepreneurship and being attractive as a career. The acquisition of entrepreneurship knowledge builds the ability to foster innovation, reduce obstacles to innovation and trains learners for entrepreneurship activities (Morales & Marquina, 2013). The findings from the one sample t-test confirmed that entrepreneurship knowledge was taking place, with the entrepreneurship knowledge significantly higher than the hypothesised mean of 3.4 (positive), $t(132) = 10.315$, $p<.05$.

Theoretical education, experimental learning and knowledge were all positive. What was of interest in line with the first objective, has been to understand if there was an influence of education proxies (theoretical education and experimental learning) on entrepreneurship knowledge. This was then investigated using Pearson correlation and the variance explained by theoretical education and experimental learning on knowledge with multiple regression. The findings have revealed that both the theoretical education ($r =0.234$, $p <.01$) and experimental learning ($r =0.334$) have a positive relationship with knowledge, with experimental learning having a stronger relationship than theoretical education. The predicting abilities of these regressors were investigated using multiple linear regression, which shows that only experimental learning was a significant predictor ($\beta = 0.312$, $p <.01$) with this predictor explaining 11.4% of the entrepreneurship knowledge among the high school learners.

Hypothesis 2: *The entrepreneurship theoretical education (H_{2a}) and experiential learning (H_{2a}) in high schools has an influence on the development of entrepreneurship skills.*

Entrepreneurship learning is understood as a problem-solving process centred on the acquisition, storage and use of entrepreneurship skills in the long-term memory (Quality Assurance Agency for Higher Education, 2012). Entrepreneurship skills development is associated with entrepreneurship learning as entrepreneurship learning seeks to expose learners to new practices that add value to the market and streamline the economy (Martin, McNally & Kay, 2013). This means that skills are developed through building the association with entrepreneurship learning.

The results of this study have revealed that entrepreneurship skills were rated the highest (mean = 3.94, SD = 0.636). This means that in general, the respondents were agreeing with the statements posed to them about the entrepreneurship skills. In particular, there was a very

strong agreement amongst respondents that the content and the teaching of EMS at their schools helped and gave them confidence to easily identify business opportunities and engage other people about business. Entrepreneurship skills development is associated with experimental learning (Roberts, 2012; Rocha, Carneiro & Varum, 2015). Experimental learning provides learners with new experience with the outcome being a set of new skills (Ubulom & Enyoghasim, 2012). The skills developed through experiential learning enables learners to address changing circumstances in business (Müller, 2011; Roberts, 2012). The findings from one sample t-test confirmed that entrepreneurship skills was taking place, with the entrepreneurship skills significantly higher than the hypothesised mean of 3.4 (positive), $t(131) = 9.740$, $p<.05$.

The results from influence of skill, by the theoretical education and experimental learning revealed that theoretical education has a medium positive relationship with skills ($r = 0.424$, $p <.01$) and experimental learning had a strong positive relationship with skills ($r = 0.594$, $p <.01$). Based on the results of multiple regression, it was evident that experimental learning has good predicting ability towards the skills with $R^2 = 0.364$ (36.4%). However, theoretical education did not show any significant predicting ability ($\beta= 0.137$, $p = .095$).

Although both theoretical education and experimental learning have shown a positive relationship with entrepreneurship skills, a direct association is shown between experimental learning and entrepreneurship skills. This explains the good predicting ability of experimental learning towards the skills.

In summary, education does influence the entrepreneurship knowledge and skills among the high school learners, with the main influence coming from the experimental learning rather than the theoretical education. The hypothesis 3 below tested the influence of theoretical education and experiential learning on the learners' intention towards entrepreneurship careers.

Hypothesis 3: *The entrepreneurship theoretical education (H_{3a}) and experiential learning (H_{3b}) in high schools has an influence on the learners' intention towards entrepreneurship careers.*

Entrepreneurship education equip learners with the knowledge, skills and experience needed to acquire a successful business (Morales & Marquina, 2013; Pulka et al., 2014). Furthermore,

the appreciation of entrepreneurship education as an important means of developing entrepreneurship knowledge and skills in a learner is as a result of entrepreneurship attitude (Pulka et al., 2014). Against this background, it is sensible to understand the influence of entrepreneurship education on intention.

This research investigated the influence of entrepreneurship education on entrepreneurship intention using entrepreneurship attitude and behaviour. Entrepreneurship attitudes can be measured in terms of behavioural attitude (Morales & Marquina, 2013:129: Pulka et al., 2014). Behavioural attitude can be seen from a learner's intention towards becoming an entrepreneur rather than working for someone else (Von Graevenitz et al., 2010). As a result, for entrepreneurship behavior to be seen in a learner, a certain degree of entrepreneurship intention must first be shown from a learner (Oosterbeek, van Praag & Ijsselstein, 2010).

The results of the current study revealed high levels of entrepreneurship intention (Mean = 3.68, SD = 0.6699). This means that in general, the respondents of this study agreed with the statements posed to them about the entrepreneurship intention. In particular, there was agreement that their exposure to EMS as a subject has resulted in their intention to start a business. Learners' identification of entrepreneurship prospects is dependent on the information they have already learned (Heuer & Kolvereid, 2014). As a result, learners will pursue and exploit business opportunities because of entrepreneurship intention (Fossen & Kritikos, 2014). The one sample t-test from the findings confirmed the entrepreneurship intention, with the entrepreneurship intention significantly higher than the hypothesised mean of 3.4 (positive), $t(132) = 4.893$, $p<.05$.

The results of the Pearson correlation have revealed that both the theoretical education as well as experimental learning have a positive relationship with internship intention among the high school learners. Despite this, their overall prediction of the intention was only 10.6%, with the experimental learning the only significant predictor of the entrepreneurship intention (β = 0.235, $p<0.05$).

The knowledge and skills gained from entrepreneurship education programmes are aimed at stimulating learners' entrepreneurship intentions and challenging learners to establish new businesses (Rocha, Carneiro & Varum, 2015). These programmes are based on theoretical

education and experimental learning (European Commission, 2014). Furthermore, both theoretical education and experimental learning stimulates the employment of all-inclusive teaching approaches and trainings that attempt to indoctrinate entrepreneurial skills as well as encourage entrepreneurial intentions of learners (Neck & Greene, 2011). This is seen to confirm a positive relationship and the predicting abilities between experimental learning and entrepreneurship skills found in this study.

5.4 CHAPTER SUMMARY

Entrepreneurship education is effective in entrepreneurship knowledge, skills and intention.

What is interesting is the strong relation but poor predicting abilities between entrepreneurship knowledge, skills and intention with theoretical education. A stronger relationship and predictor of entrepreneurship knowledge, skills and intention seems to rather be on experimental learning.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This study was critical and significant within the context of South Africa, as South Africa is sitting with very high levels of unemployment. As of the fourth quarter of December 2018 the country is sitting at 27.4%, though marginally lower than the previous quarter but still extremely high (Statistics South Africa, 2018). More importantly, the country is battling with graduates not finding employment. This study is then important in the enhancement of both economical actives and entrepreneurship. as it assesses whether entrepreneurship intention is being developed at the very young age so that learners can see entrepreneurship as an alternative and possibly as a first choice of being economically active rather than as a fallback or a necessity. As the findings of this study clearly show the effectiveness of entrepreneurship education in high school learners.

The literature has shown that South Africa, has a low entrepreneurship intention and that the majority of entrepreneurs are necessity driven because they do not have a choice. Creating entrepreneurship as a choice will develop a different approach and focus of entrepreneurship to be economically active. Therefore, this study was critical to understand those relationships and as we have explained in chapter one, there are very few studies that have been done within the setting of South Africa in that way. This was done by investigating the two objectives which were: determining whether entrepreneurship education in high schools is effective in the development of entrepreneurship knowledge and skills; and determining whether entrepreneurship education positively influences learners' intention towards entrepreneurship careers. As was previously explained, this study was done using quantitative methods and developing relationships in order to understand the significance of these relationships.

In this chapter, the overall summary findings of the study are done as well as the conclusions of the study. The limitations of the study are critical to contextualise the findings as like any study, the study cannot be without limitations. The study ends by presenting recommendations, firstly, for the learners focusing on how the can enhance their intention; secondly, for the educators and policy makers on how they can enhance on those areas which emerged on the

study and those that are not covered by the scope but related to academia for future investigation.

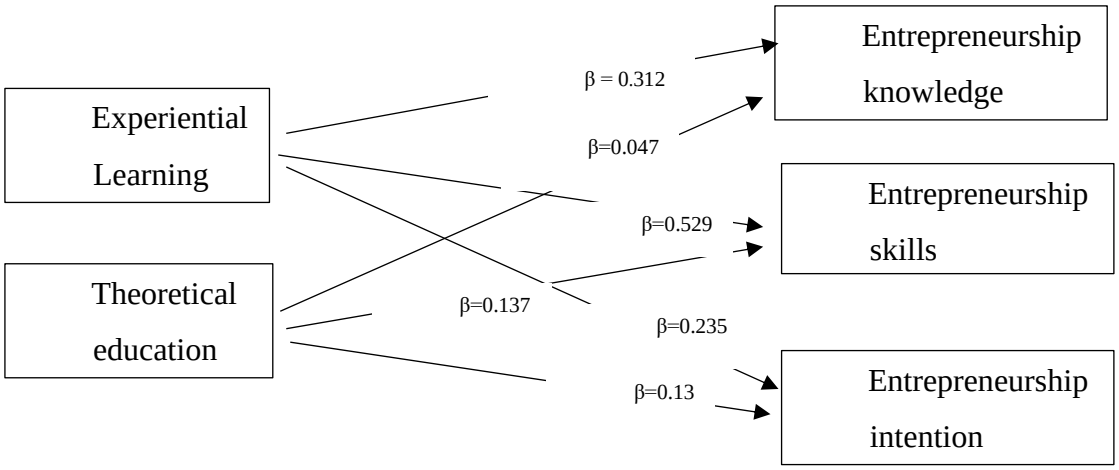
6.2 SUMMARY OF THE FINDINGS AND REVISED MODEL

Having presented the findings in Chapter 4 and discussed in Chapter 5, the following are the overall findings of the study:

- Firstly, the learners have acknowledged that entrepreneurship education is effective in their schools resulting in entrepreneurship intention.
- Secondly, there is a positive relationship between theoretical education and experimental learning with skills, though the main predictor or driver of that relationship has been experimental learning.
- Thirdly, there is a positive relationship between theoretical education and experimental learning with knowledge, though the main predictor or driver of that relationship has still been experimental learning.
- Lastly, there is a positive relationship between theoretical education and experimental learning with intention though again, the main predictor or driver of that relationship has been experimental learning.

Based on the findings of the study, the revised model is presented in Figure 6.1. The outcome shows that experiential learning has a significant influence on the development of entrepreneurship knowledge, entrepreneurship skills and entrepreneurship intention, as shown by the standardized Beta, and t-statistics in parenthesis.

Figure 6-1: Revised model of entrepreneurship education.



*- p<.05 ** - p<.01 *** - p <.001

Source: Researcher's own construction

The sample t-test from the current research findings confirmed that the entrepreneurship education was useful, and experiential learning, entrepreneurship skills and entrepreneurship knowledge were taking place leading to entrepreneurship intention, with entrepreneurship education, experiential learning, entrepreneurship skills, entrepreneurship knowledge and entrepreneurship intention significantly higher than the hypothesised mean of 3.4 (positive), $t(136) = 9.866$, $p<.05$.; $t(132) = 10.315$, $p<.05$.; $t(126) = 4.216$, $p<.05$.; $t(131) = 9.740$, $p<.05$. and $t(132) = 4.893$, $p<.05$ respectively.

Based on the results of multiple regression, it was evident that experimental learning has good predicting ability towards the skills with $R^2 = 0.364$ (36.4%). However, theoretical education did not show any significant predicting ability ($\beta= 0.137$, $p = .095$). Furthermore, experimental learning was a significant predictor ($\beta = 0.312$, $p <.01$) with this predictor explaining 11.4% of the entrepreneurship knowledge among the high school learners. Both the theoretical education ($r =0.234$, $p <.01$) and experimental learning ($r =0.334$) have a positive relationship with knowledge, with experimental learning having a stronger relationship than theoretical education. Entrepreneurship intention was only 10.6%, with the experimental learning the only significant predictor of the entrepreneurship intention ($\beta = 0.235$, $p<0.05$).

6.3 CONCLUSION

The study has shown that entrepreneurship as a subject is being taught at schools through Economic Management Sciences subjects. This entrepreneurship education is done at schools in the form of theoretical and experiential learning. Overall, the experiential learning seems to have the highest levels of positive influence on entrepreneurship knowledge, skills and intention. Demonstrating the effectiveness of entrepreneurship education in high school learners in South Africa.

6.4 LIMITATION OF THE STUDY

There are some limitations of the current study. Firstly, there was no analysis of the curricular of entrepreneurship education which then can further explain some of the findings such as the predicting effects of entrepreneurship education. Secondly, the study did not use probability sampling method such as random selection as there was no available database of all the learners in the target population and the resources did not allow for such a database to be created. Therefore, the study as such, lacked generalisability as it used a non-probability sampling method, of judgemental sampling. Thirdly, there could have been certain generic factors which could have influenced how participants could have responded at that particular point in time which might have been different had they been surveyed at a different time. For instance, if there was entrepreneurship practical or experimental training at that time that might have caused them to see it in a much more positive light compared to if the circumstance might have changed. This is possible when it comes to cross-sectional studies unlike the longitudinal study which is done over a long period of time. So, this study took that into consideration when interpreting the results. Lastly, the study only focused on learners who had EMS and not all the students, other learners fell out the scope of study.

6.5 RECOMMENDATIONS

The recommendations of the study are broken down into three categories, namely, recommendations for learners and educators, recommendations for policy makers and recommendations for future studies.

6.5.1 Recommendations for learners

The findings of the study indicated that entrepreneurship as a subject has an influence on the choice of entrepreneurship as a career. It is therefore recommended that learners must expose

themselves to business people. The exposure will enable the learners to understand entrepreneurship and how business people succeed in their entrepreneurship careers. It is also recommended that learners should use tools like the internet to research more about entrepreneurship and attend workshops where successful entrepreneurs share their experiences.

6.5.2 Recommendations for educators

Entrepreneurship education was found to be the main influencer of entrepreneurship intention amongst learners. It is therefore recommended that educators utilise properly structured experiential learning, where learners would put their theoretical learning into practice.

6.5.3 Recommendations for policy makers

Government involvement in entrepreneurship education has been identified as being vital in enabling entrepreneurship intention. It is recommended that a policy be developed that forces government departments and the private sector to expose learners to entrepreneurship by involving them in experimental learning. This can be done through school holidays internship, over the shoulder training and volunteering. It is also recommended that entrepreneurship education be made a mandatory subject within the schooling environment at the basic education level. It is further recommended that entrepreneurial orientation programmes be introduced for all learners.

6.5.4 Recommendation for future studies

The focus of the study was on learners who took entrepreneurship as a subject in high school. Furthermore, the findings indicated that some of the learner's entrepreneurship intention was influenced by other factors other than entrepreneurship education. It is therefore recommended that comparative study be done on learners with and without entrepreneurship education as part of their subjects. This could bring a perspective on other factors that could influence entrepreneurship intention in learners. It is also recommended that the same research be done on a larger geographical location and include both public and private schools. Lastly it is recommended that a study be done on the influence of the necessary or opportunity entrepreneurship on entrepreneurship intention. This will then investigate whether people start a business because they see an opportunity or whether they perceive entrepreneurship as an alternative.

REFERENCES

Ajayi, V.O. 2017. *Primary Sources of Data and Secondary Sources of Data*. Benue State University: Makurdi.

Altinay, L., Madanoglu, M., Daniele, R. and Lashley, C. 2012. The influence of family tradition and psychological traits on entrepreneurial intention. *International Journal of Hospitality Management*, 31(2): 489–499.

Antonites, A. 2015. *The Mamelodi Business Clinic, Empowering businesses to strengthen local economy and create jobs*. Pretoria: University of Pretoria.

Ariola, M. 2006. *Principles and Methods of Research*. Manila: Rex Book Store

Autio, E. 2007. *Global Report on High-Growth Entrepreneurship*. Entrepreneurship Monitor. ETLA discussion paper. Finland, [online]. Available at: http://www.ventureprise.org/ (Accessed on 23 June 2017).

Athayde, R. 2009. Measuring enterprise potential in young people. *Entrepreneurship Theory and Practice*, 33 (2): 481–500.

Bae, T.J., Qian, S., Miao, C. and Fiet, J.O. 2014. The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review, *Entrepreneurship Theory and Practice*, 38(2): 217–254

Bakotic, D. and Kruzic. D. 2010. Students' Perceptions and Intentions Towards Entrepreneurship: The Empirical Findings from Croatia, The Business Review 14(2): 209-215.

Ball, S.J. 2013. *Foucault and education: Disciplines and knowledge*. London: Routledge.

Barnard, J.M. 2012. *An Assessment of Entrepreneurial Intentions of Secondary School Learners in Selected Areas.* Masters Dissertation. Potchefstroom: North-West University

BarNir, A. Watson, W.E., and Hutchins, H.M. 2011. Mediation and moderated mediation in the relationship among role models, self-efficacy, entrepreneurial career intention, and gender. *Journal of Applied Social Psychology*, 41 (2): 270–297.

Barringer, B.R. and Ireland, R.D. 2010. *Entrepreneurship: Successfully launching new ventures*. 3rd ed. New Jersey: Pearson.

Basu, A. and Virick, M. 2008. *Assessing entrepreneurial intentions amongst students: A comparative study*.

Bawuah, K. Buame, S. and Hinson, R. 2006. *Reflections on Entrepreneurship*.

Education in African Tertiary Institutions. Accra: University of Ghana.

Blaxter, L., Hughes, C. and Tight, M. 2006. *How to research*. Berkshire: Open University Press.

Becker, G. S. 1964. *A Theoretical and Empirical Analysis with Special Reference to Education*. New York: National Bureau of Economic Research.

Bengtsson, M., 2016. How to plan and perform a qualitative study using content Analysis, *Nursing Plus Open*, 2: 8-14.

Betram, D. 2009. *Likert Scales*. Topic Report, Belgrade: The Faculty of Mathematics University of Belgrade.

Bosma, N and Kelley, D. 2019. Global Entrepreneurship Monitor. 2018/19 Global report. Global Entrepreneurship Research Association, London Business School: London.

Brasher P.M. and Brant R.R. 2007. Sample size calculations in randomized trials: common pitfalls. 54: 103–106

Braun, V. and Clarke, V. 2006. Using thematic analysis in psychology, *Qualitative Research in Psychology*, 3(2): 77-101.

Bridge, S., O'Neill, K. and Cromie, S. 1998. *Understanding Enterprise, Entrepreneurship and Small Business*, Hampshire: Macmillan Business.

Brinckmann, J. and S. M. Kim. 2015. Why we plan: The impact of nascent entrepreneurs' cognitive characteristics and human capital on business planning. *Strategic Entrepreneurship Journal*. 9(2): 153–166

Brown, M.J.M. 2012. *Entrepreneur Education Assessment in Secondary Schools*. MBA dissertation, University of Pretoria: Pretoria.

Bryman, A. and Bell, E. 2007. *Business Research Methods*. 2nd ed. London: Oxford University Press.

Bonnon, W.M. 2013. *The 7 Steps of Data Analysis: A Manual for Conducting a Quantitative Research Study*. New York: Stats Whisperer Press.

Boyles, T. 2012. 21st century knowledge, skills, and abilities and entrepreneurial competencies: A model for undergraduate entrepreneurship education. *Journal of Entrepreneurship Education*, 15: 41–55.

Burns, S.N. and Grove, S.K. 2003. *Understanding nursing research*. 3rd ed. Philadelphia: Saunders.

Caliendo, M., Fossen, F. and Kritikos, A. S. 2014. Personality characteristics and the decisions to become and stayself-employed. *Small Bus Econ*, 42: 787 – 814.

Carvalho, L. C. 2015. *Handbook of Research on Internationalization of Entrepreneurial Innovation in the Global Economy*. Portugal: Universidade Aberta.

Chan, E. S. K. 2005. *'Entrepreneurship Education in Australia- A Preliminary study',* Asia Entrepreneurship and Sustainability. Manuscript submitted for publication.

Charney, A. and Libecap, G.D. 2000. *Impact of Entrepreneurship Education, Insights*: A Kauffman Research Series. Kauffman Center for Entrepreneurial Leadership: Kansas City, MO.

Chell, E., 2013. Review of skill and the entrepreneurial process. *International Journal of Entrepreneurial Behaviour & Research* 19(1): 6–31.

Chimucheka, T. 2014. Entrepreneurship Education in South Africa. *Mediterranean Journal of Social Sciences*. 1(5): 403-416.

Chell, E. 2013. Review of skill and the entrepreneurial process. International Journal of Entrepreneurial Behaviour and Research, 19(1): 6-31.

Chen, Y. 2016. *Spatial Autocorrelation Approaches to Testing Residuals from Least Squares Regression*. [online]. PLOS ONE. Available from:<http://dx.doi.org/10.1371/journal.pone.0146865.

Chowdhury, M.S. 2007. Overcoming Entrepreneurship Development Constraints: The case of Bangladesh. Journal of Enterprising Communities. 1(3): 240-251.

Coldwell, D. and Herbst, F. 2004. Business Research. Juta: Cape Town.

Corbett, A. C. 2005. Experiential learning within the process of opportunity identification and exploitation. Entrepreneurship Theory and Practice, 29(4): 473-491.

Collett. K. and Gale. C, 2012. Report on *an evaluation of JASA's Entrepreneurship Academy programme*. Report to Centre of Skills and Development [online]. Available http://www.jasa.org.za (Accessed on 2 June 2017).

Combs, J. P. and Onwuegbuzie, A. J. 2010. Describing and illustrating data analysis in mixed research: *International Journal of Education*. 2: 1-23.

Consortium for Entrepreneurship Education, 2013. *Introducing the DOL Entrepreneurship Competency Model*. Columbus: Ohio.

Council of the European Union. 2014. *Council conclusions on entrepreneurship in education and training, Education, Youth, Culture and Sport Council meeting Brussels.*

Creswell, J.W. 2015. *A concise introduction to mixed methods research*. Thousand Oaks, CA.: Sage Publications.

Creswell, J.W. 2010. *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd ed. Los Angeles: SAGE Publishers.

Creswell, R. 2014. *Research design: qualitative, quantitative, and mixed methods approaches.* 4th ed. Thousand Oaks, CA.: Sage Publications.

Christensen, L & Johnson, B. 2012. Educational Research, Qualitative, Quantitative and Mixed Approach. 4th ed. California: SAGE Publication.

Dabale, W. P. and Masese, T. 2014. The influence of entrepreneurship education on beliefs, attitudes and intentions: a cross-sectional study of Africa University graduates. *European journal of Business and Social Sciences*, 3(9): 1–13.

Daniel, A. D., Pita, M., Costa, R. and Costa, C. 2016. *University-business collaboration in Entrepreneurship Education: The Learning to be program.* II Jornadas Ensino do Empreendedorismoem Portugal, Proceedings, 307-318.

Debyser, A. 2013. '*Promoting entrepreneurship through education'*. European Parliamentary Research Service [online]. Available at: www.europarl.europa.eu/eplibrary (Accessed on 12 June 2017).

Delchambre, L. 2014. Weighted principal component analysis: a weighted covariance eigendecomposition approach.

Denzin, N. and Lincoln, Y. (Eds.). 2011. *Handbook of qualitative research.* 4th ed. Thousand Oaks, CA: Sage.

De Waal, A. 2004. Business start-ups and early-stage entrepreneurship. *International Journal of Entrepreneurship and Small Business*, 1(3/4): 223–229.

Diamantopoulos, A. & Schlegelmilch, B.B. 2005. *Taking the fear out of data analysis.* London: Thomson Learning.

Diener-West, M. 2008. The Use of Chi-Square Statistics. Available at: www.ocw.jhsph.edu/courses/fundepiii/PDFs/Lecture17.pd (Accessed 15 May 2019)

Drnovsˇek, M. Wincent, J. and Cardon.S. M, 2009. Entrepreneurial self-efficacy and business start-up, *International Journal of Entrepreneurial Behaviour and Research*, 16(4): 329-348.

Duval-Couetil, N. and Long. Z. 2014. Career impacts of entrepreneurship education: How and why students intend to utilize entrepreneurship in their professional lives, *Journal of Business and Entrepreneurship*, 26(1), 63-88.

Draycott, M., Rae, D. and Vause, K. (2011), The assessment of enterprise education in the secondary education sector. A new approach? *Education þ Training*, 53(8/9): 673-91.

EACEA, 2012. *Entrepreneurship Education at School in Europe. National Strategies, Curricula and Learning Outcomes.* Europe: EACEA [online]. Available at http://eacea.ec.europa.eu/education/eurydiceLackéus (Accessed on 2 June 2017).

EACEA, 2016. *Entrepreneurship Education at School in Europe*. 2016 Edition. Europe: EACEA [online]. Available at http://eacea.ec.europa.eu. (Accessed on 2 June 2017).

Edelman L., Manolova T., Shirokova G. and Tsukanova, T. 2016. The impact of family support on young entrepreneurs' start-up activities. *Journal of Business Venturing*, 31(4): 428-448.

Ediagbonya, K. 2013. The roles of entrepreneurship education in ensuring economic empowerment and development. *Journal of Business Administration and Education*, 4(1): 35-46.

Eurochambres, 2015. *Entrepreneurial Skills Training provided by chambers of commerce and industry across Europe.* EPA QA/G-5S. Washington, DC: Eurochambres [online]. Available at www.eurochmbres.eu. (Accessed on 2 June 2017).

European Commission, 2011. *Enabling Teachers as a Critical Success Factor.* Europe. European Commission [online]. Available at: http://ec.europa.eu. (Accessed on 2 June 2017)

European Commission. 2012. *Effects and impact of entrepreneurship programmes in higher education*. Available at: http://ec.europa.eu/DocsRoom/documents. Accessed on 2 July 2018)

European Commission. 2014. *Entrepreneurship Education: A Guide for Educators*. Available at: http://ec.europa.eu/DocsRoom/documents/7465. (Accessed on 2 July 2018)

Faul, F., Erdfelder, E., Buchner, A., and Lang, A.G. 2009. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. 41:1149–1160.

Farouk, A., Ikram, A and Sami, B. 2014. The Influence of Individual Factors on the Entrepreneurial Intention. *International Journal of Managing Value and Supply Chains* (IJMVSC), 5(4): 47-57

Fatoki, O., and Chindonga, L. 2011. An Investigation into the Obstacles to Youth Entrepreneurship in South Africa, *International business research*, 4(2):16.

Fatoki, O., and Oni. O. 2014. Students' Perception of the Effectiveness of Entrepreneurship Education at a South African University, *Mediterranean Journal of Social Sciences*, 5(20): 585-591.

Fayolle, A., Gailly, B. and Lassas-Clerc, N. 2006. Assessing the impact of entrepreneurship education programmes, A new methodology. *Journal of European Industrial Training*, 30: 701-720.

FNB, 2016. *State of Entrepreneurship in South Africa*. South Africa. FNB [online]. Available at: https://www.fnb.co.za/downloads (Accessed on 14 July)

Freeman, S. 2000. Partnerships between small and medium enterprises and universities that add value, *Journal of Education and Training*, 42(6): 372-377.

Fraenkel, J.R., and Wallen, N. 2003. *How to Design and Evaluate Research in Education*. 5th ed. New York: McGraw-Hill.

Fuchs, K., Werner, A., and Wallau, F. 2008. Entrepreneurship Education in Germany and Sweden: what role do different school systems play? *Journal of Small Business and Enterprise Development,* 15 (2): 365-381.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*. 11.0 update (4th ed.). Boston: Allyn & Bacon.

Gerba, D.T. 2012. Impact of entrepreneurship education on entrepreneurial intentions of business and engineering students in Ethiopia. *African Journal of Economic and Management Studies*, 3(2): 258–277.

Ghina, A., Simatupang, T.M. and Gustomo, A. 2014. A Systematic Framework for Entrepreneurship Education within a University Context, *International Education Studies*, **7** (12): 1-19.

Gibb, A. A. 2002. Creating Conducive Environments for Learning and Entrepreneurship; living with, dealing with, creating and enjoying uncertainty and complexity. *Journal of Industry and Higher Education,* 16(3): 135–148.

Giordano, J., O'Reilly, M., Taylor H. and Dogra N. 2007. Confidentiality and autonomy: The challenges of offering research participants a choice of disclosing their identity. *Qualitative Health Research,* 17: 264–275.

Global Business School Network. 2013. *Education, Employment and Entrepreneurship*. Washington, DC. Global Business School Network.

Green, F. 2013. '*Youth Entrepreneurship',* OECD Centre for Entrepreneurship. Manuscript submitted for publication.

Greene, P. G., Brush, C. G., Eisenman, E. J., Neck, H. and Perkins, S. 2016. *Entrepreneurship Education: A Global Consideration from Practice to Policy Around the World*. Wellesley, Massachusetts: Babson College.

Gribben, A. A. 2005. *ETF, Education and training for entrepreneurship: a progress review of the contribution of the Western Balkans and Moldova to the European Charter for Small Enterprises*, European Training Foundation, Turin.

Golafshani, N. 2003. Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 8(4): 597-606.

Gorman, G., Hanlon, D. and King, W. 1997. Some research perspectives on entrepreneurship education, enterprise education and education for small business management: a ten-year literature review. *International Small Business Journal*,15: 56-77.

Gwija, S.A., Eresia-Eke,C. and Iwu, C.G. 2014. Challenges and prospects of youth entrepreneurship development in a designated community in the Western Cape, *South African Journal of Economics and Behavioural Studies*, 6 (1): 10-20.

Heale. R. and Twycross, A. 2015. Validity and reliability in quantitative studies. *Evid Based Nurs* 18(3):66–67.

Hagerstrom, G.E. 2010. *Personal Factors, Perceptions, Influences and Their Relationship with Adherence Behaviours in Patients with Diabetes*. Georgia State University. USA, 13-24.

Hatak. I. and Reiner. E, 2012. Entrepreneurship Education in Secondary Schools, *Scandinavian Journal of Educational Research,* 57 (4): 357 -368.

Haus, I., Steinmetz, H., Isidor, R. and Kabst, R. 2013. Gender effects on entrepreneurial intention: A meta-analytical structural equation model. *International Journal of Gender and Entrepreneurship,* 5 (2):130–156.

Hattab, H. W. 2015. The Impact of Entrepreneurship Education on Entrepreneurial Intentions of University Students in Egypt. *The Journal of Entrepreneurship,* 23(1):1-18.

Haynie, J. M., Shepherd, D., Mosakowski, E., and Earley, P. C. 2010. A situated metacognitive model of the entrepreneurial mindset, *Journal of Business Venturing*, 25(2): 217-229.

Henry, C., Hill, H., & Leitch, C. 2005. Entrepreneurship education and training: Can entrepreneurship be taught? Part I. *Education + Training*, 47(1): 98-111.

Herrington, M. and Kew, P. 2015. *Global Entrepreneurship Monitor: South African Report 2015/16. Is South Africa heading for an economic meltdown?* Cape Town: University of Cape Town.

Herrington, M., Kew, P. and Mwanga, A. 2017. *South Africa Report*. Global Entrepreneurship Report. Cape Town: University of Cape Town.

Heuer, A. and Kolvereid, L. 2014. Education in entrepreneurship and the Theory of Planned Behavior. *European Journal of Training and Development*, 38(6): 506–523.

Hill, B. D. 2011. The sequential Kaiser-Meyer-Olkin procedure as an alternative for determining the number of factors in common-factor analysis: A Monte Carlo simulation *Doctoral dissertation, Oklahoma State University.*

Horn, G. 2006. Educational solutions to improve the employability of senior high school learners, *South African Journal of Education*, 26 (1): 113.

Hoyer, W. and MacInnis, D. 2004. *Consumer behavior* 3rd ed. Boston, MA: Houghton Mifflin.

Hungler, B.P., and Polit, D.F. 1995. *Nursing research: Principles and method* 5th ed. Philadelphia: Lippincott.

Hytti, U., Stenholm, P. and Heinonen, J. 2010. Perceived Learning Outcomes in Entrepreneurship Education. *Education + Training*, 52 (8/9): 587-606.

Ilouga, S. N., Mouloungni, A. C. N. and Sahut, J. M. 2014. Entrepreneurial intention and career choices: the role of volition. *Small Bus Econ*, 42: 717 – 728.

International Labour Organization. 2018. *World Employment and Social Outlook Tends 2018*. Geneva: ILO

International Labour Organization. 2017. *World Employment and Social Outlook Trends 2017*. Geneva: ILO.

Irimie, S., Băleanu, V., Ionică, A., 2008. *Entrepreneurship education: Meanings and needs*, Proceedings of the International Conference on Economics, Law, and Management.

Isaacs, E., Visser, K., Friedrich, C. and Brijlal, P. 2007. Entrepreneurship education and training at the Further Education and Training (FET) level in South Africa. *South African Journal of Education*, 27(1): 613-629

Jakubczak, J. 2015. *Youth entrepreneurship barriers and role of education in them overcoming*: Proceedings of the Joint International Conference on Management Knowledge and Learning, May 27-29. TIIM.

Jones, C. and English, J. 2004. A contemporary approach to entrepreneurship education, *Education and Training*, 46 (8/9): 416-23.

Karimi, S., Biemans, H. J. A., Lans, T., Chizari, M. and Mulder, M. 2014. Effects of role models and gender on students' entrepreneurial intentions. *European Journal of Training and Development*, 38(8): 694-727.

Khuong, M. N. and An, N. H. 2016. The factors affecting entrepreneurial intention of the students of Vietnam national university mediation analysis of perception toward entrepreneurship. *Journal of Economics, Business and Management*, 4(2): 104–111.

Kirkwood, J. 2007. Tall Poppy Syndrome: Implications for entrepreneurship in New Zealand. *Journal of Management and Organization*, 13(4): 366-382.

Koe, W.L. 2016. The Relationship between Individual Entrepreneurial Orientation and Entrepreneurial Intention. *Journal of Global Entrepreneurship Research*, 6(13): 1-11.

Kolb, A. Y. 2005. Learning Style and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning and Education* 4(2):193-212

Kunene, T.R. 2008. *A critical analysis of entrepreneurial and business skills in SMEs in textile and clothing industry in Johannesburg, South Africa*. Unpublished Doctoral Thesis. University of Pretoria, South Africa.

Kumar, S. and Ahmad, S. 2007. *Meaning, Aims and Process of Education*. Delhi, India: university of Delhi.

Lackeus, M. 2013. *Developing entrepreneurial competencies: An action-based approach and classification in education*. Licentiate of Engineering Thesis, Chalmers University of Technology, Sweden.

Lackeus, M. 2015. *Entrepreneurship in Education: What, Why, When, How*, Entrepreneurship360 background paper. Manuscript submitted for publication.

Lafontaine, F. and Shaw, K. 2014. *Serial Entrepreneurship: Learning by Doing?* NBER Working Paper No. 201312. National Bureau of Economic Research. Cambridge, M.A.

Leedy, P. and Ormrod, J. E. 2015. *Practical Research Planning and Design*. 11th ed. Edinburgh: Pearson Educational Inc.

Lekoko, M., Rankhumise, E. M. and Ras, R. 2012. The effectiveness of entrepreneurship education: What matters most? *African Journal of Business Management* 6(51): 12023-12033.

Levin, J. A., Fox, J. A. and Forde, D. R. 2010. *Elementary Statistics in Social Research* 11th ed. Munchen: Pearson Education.

Lima, E., Lopes, R., Nassif, V. and da Silva, D. 2015. Opportunities to improve entrepreneurship education: Contributions considering Brazilian challenges, *Journal of Small Business Management*, 53 (4): 1033-1051.

Liñán, F. 2008. Skill and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship Management Journal* (4):257–272.

Liñán, F. and Chen, Y. W. 2009. Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 33(3): 593-617.

Liñán, F., Fernández, J. and Romero, I. 2013. Necessity and opportunity entrepreneurship: The mediating effect of culture. *Revista de Economía Mundial*, 33: 21-47.

Liñán, F. and Fayolle, A. 2015. A systematic literature review on entrepreneurial intentions: Citation, thematic analyses and research agenda. *International Entrepreneurship and Management Journal*, 11(4): 907-933.

Lewandowski, M. 2013. *Introduction to Academic Entrepreneurship*. In Academic Entrepreneurship and Technological Innovation; IGI Global: Hershey, PA, USA.

Lunetta, V. N., Hofstein, A. and Clough, M. P. 2007. Learning and teaching in the school science laboratory: an analysis of research, theory, and practice. In S. K. Abell & N.

Maes, J., Leroy, H. and Sels, L. 2014. Gender differences in entrepreneurial intentions: a TPB multi-group analysis at factor and indicator level. *European Management Journal*, 32(5):784-794.

Mahadea, D. Ramroop, S. and Zewotir, T. 2011. Assessing entrepreneurship perceptions of high school learners in Pietermaritzburg*'* South *African Journal of Economic and Management Sciences*. 14(1).

Mahmoud, M. A., Muharam, F. M. and Mas'ud, A. 2015. Factors that influence the entrepreneurial intention of Nigerian postgraduates: Preliminary analysis and data screening. *Asian Social Science*, 11(4): 180–189.

Mamun, A. A., Fong, S. P. and Nawi, N. B. C. 2017. Entrepreneurship Education and Students' Career Choice, *Advanced Science Letters*, 23(4): 2954-2957.

Mapfaira, H. and Setibi, G. 2014. *Enterprise and entrepreneurship education: Promoting an enterprising culture among students*. Available at www.fes-botswana.org. (Accessed: 10th March 2018).

Mbuisa, M. 2016. Assisting Grade 12 learners in township schools to perform optimally: a case study in the Tshwane South District of Gauteng Province, University of South Africa, Pretoria.

Miranda F.J., Chamorro-Mera A. and Rubio S. 2017, Academic Entrepreneurship in Spanish Universities: An Analysis of the Determinants of Entrepreneurial Intention, *European Research on Management and Business Economics*, 23(2): 113-122.

Martin, B.C., McNally, J.J., and Kay, M.J. 2013. Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, 28: 211–224.

Mayring, P. 2007. On Generalization in Qualitatively Oriented Research, Forum Qualitative Sozialforschung/Forum *Qualitative Social Research*, 8(3): 26,1-8.

McKenzie, D. and Woodruff. C. 2012. *What Are We Learning from Business Training and Entrepreneurship Evaluations Around the Developing World*? Policy Research Working Paper 6202, World Bank, Washington, DC.

Mellor, R., Coulton, G., Chick, A. Bifulco, A., Mellor, N. and Fisher, A. 2009. *Entrepreneurship for Everyone*, London: SAGE Publications.

Mensah, M. S. B. 2013. Entrepreneurship Education on Wholesale? Considerations on Didactics and Pedagogy for Enhanced Graduate Employment in Ghana. *European Journal of Business and Management*, 5(15): 109-113.

Moberg, K., Vestergaard, L., Fayolle, A., Redford, D. T., Cooney, T., Singer, S., Sailer, K. and Filip, D. 2014. *How to assess and evaluate the influence of entrepreneurship education* - A report of the ASTEE project with user guide to the tools. Ireland.

Morales, C. and Marquina, P. S. 2013. Entrepreneurial Skills, Significant Differences between Serbian and German Entrepreneurs. *The Business and Economics Research Journal*, 6(1): 129-141.

Moreno, A. M. and Casillas, J. C. 2008. Entrepreneurial Orientation and Growth of SMEs: A Causal Model. *Entrepreneurship Theory and Practice*.

Mueller, S. and Anderson, A. R. 2014. Understanding the entrepreneurial learning process and its impact on students' personal development: A European perspective. *International Journal of Management Education,* 12(3): 500–511.

Mwasalwiba, E.S. 2010. Entrepreneurship education: A review of its objectives, teaching methods, and impact indicators. *Education + Training*, 52(1): 20-47.

Nassif, V. M. J., Ghobril, A. N. and Silva, N. S. 2010. Understanding the Entrepreneurial Process: A Dynamic Approach. *BAR - Brazilian Administration Review*.

National Council of Educational Research and Training. 2014. *Basics in Education*, 1s ed. New Delhi: NCERT Campus [online]. Available at: https://my.rotary.org/en/document/basic-education. (Accessed on 2 June 2017).

National Youth Development Agency. 2015. *National Youth Policy 2015 – 2020. We are generation 2020*. Pretoria, Republic of South Africa: NYDA.

Neck, H. M., and Corbett, A. C. 2018. The scholarship of teaching and learning entrepreneurship. Entrepreneurship Education and Pedagogy, 1(1): 8–41.

Neck, H. and Greene, P. 2011. Entrepreneurship education: Known worlds and new frontiers. *Journal of Small Business Management,* 49(1): 55-70.

Neuendorf, K. A. 2017. *The Content Analysis Guidebook*. 2nd ed. London, New Delhi: SAGE Publications

Nchu, R. M., Tengeh, R. K., and Hassan, S. 2015. High School Learners' perception of the efficacy of entrepreneurship education. *South African Journal of Education*, 27(4): 613–629.

Nicolaides, A. 2011. Entrepreneurship the role of Higher Education in South Africa, *International Research Journals*, 2(4): 1043-1050.

OECD. 2009. *Evaluation of Programmes Concerning Education for Entrepreneurship*, report by the OECD Working Party on SMEs and Entrepreneurship, OECD.

Omerzel, G. D. and Kušce, I. 2013. The influence of personal and environmental factors on entrepreneurs' performance. *Kybernetes* 42(6): 906-927.

Oosterbeek, H., van Praag, M. and Ijsselstein, A. 2010. The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review* 54: 442–454.

Radipere, S. 2012. South African university entrepreneurship education, *African Journal of Business Management* 6 (44): 11015-11022.

Raposo, M., and doPaço, A., 2011. Special issue: entrepreneurship and education links between education and entrepreneurial activity. *Int. Entrep. Manag. J.* 7(2): 143–144.

Ramsgaard, M.B. and Østergaard, S.J. 2018 An entrepreneurial learning approach to assessment of internships, *Education + Training*, 60(7/8): 909-922.

Resnik, D.B. 2015. *What is Ethics in Research and Why is it Important?* Washington, DC.:National Institute of Environmental Health Sciences.

Robinson, P. B., Stimpson, D. V., Huefner, J., and Hunt, H. K. 1991. An attitude approach to the prediction of entrepreneurship. *Entrepreneurship Theory and Practice*, 15(4), 13–31.

Ruskovaara, E. and Pihkala, T. 2015, Entrepreneurship education in schools: empirical evidence for the teacher's role, *Journal of Educational Research*, 108(3): 236-249.

Pramono, B. K. and Susanty, A. I. 2015. *The Influence of Personal Factors, Organizational Factors, and Technological Factors in the use of CIM toward employees Knowledge Sharing in PT.* Jalan Tol Lingkar Luar, Jakarta.

Pfeifer, S., Peterka, S. O. and Jeger, M. 2014. *Assessing Entrepreneurship Education Programmes in Croatian Higher Education Area*. University of Osijek, Croatia.

Phrasisombath, K. 2009. *Sample size and sampling methods*. [PowerPoint Presentation] 22 September. Training Course in Reproductive Health Research. University of Health Sciences, Vientiane.

Pittaway, L., Hannon, P., Gibb, A., and Thompson, J. 2009. Assessment practice in enterprise education, *International Journal of Entrepreneurial Behaviour and Research, 15*(1): 71-93.

Pretorius, M. 2008. Assessment of entrepreneurship education, *South African Journal of Business Management* 1(1): 1-19.

Polit, D.F., and Hungler B.P. 2004. *Nursing Research, Principles and Methods*. Philadephia: Lippincour.

Pulka, B.M., Rikwentishe, R. and Ibrhain, B. (2014). Evaluation of Students' Attitude towards entrepreneurship education in some selected universities in North East Nigeria. Global Journal of Management and Business Research, 14 (8): 1-8.

Pursell-Gotz, R. 2016. *Impact evaluation report submitted by Genesis Analytics to the International Labour Organization (ILO).* Genesis Analytics (Pty) Ltd, Johannesburg

Ramenah, H. Casin, P. Ba, M. Benne, M. and Tanougast, C. 2018. "*Accurate determination of parameters relationship for photovoltaic power output by augmented dickey fuller test and engle granger method*," AIMS Energy, 6(1): 19-48,

Ratten, V. 2014. Encouraging collaborative entrepreneurship in developing countries: The current challenges and a research agenda, Journal of Entrepreneurship in Emerging Economics, 6(3): 298-308.

Richards, J.C., and Schmidt, R. 2002. Longman dictionary of language teaching and applied linguistics. 3rd ed. London: Longman.

Roberts, J.W. 2012. *Beyond Learning by Doing*, New York: Routledge.

Rocha, V., Carneiro, A. and Varum, C. A. 2015. Serial entrepreneurship, learning by doing and self-selection. *International Journal of Industrial Organization*, 40: 91-106.

Ruskovaara, E. and Pihkala, T. 2014. Entrepreneurship education in schools: empirical evidence on the teacher´s role. *The Journal of Educational Research*, 0: 1-14.

Salkind, N.J. 2012. *Exploring Research*. 8th ed. New York, NY, USA: Pearson publications.

Sánchez, J.C. 2013. The Impact of an Entrepreneurship Education Program on Entrepreneurial Competencies and Intention, *Journal of Small Business Management*, 51(3): 447-465.

Saunders, M., Lewis, P., and Thornhill, A. 2009. *Research methods for business students*. 5th ed. Harlow: Pearson Education.

Schlaegel, C., and Koenig, M. 2012. *Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models*. Paper presented at the Academy of Management Annual Meeting, Boston, MA.

Schmitt, T. A. 2011. Current methodological considerations in exploratory and confirmatory factor analysis. Journal of Psychoeducational Assessment, 29(4): 304-321.

Setiawan, J.L. 2012. *Entrepreneurship Program Assessment by Students Outcome on Their Perceived Entrepreneurial Characteristics*. Paper presented at Indonesia International Conference on Innovation. Entrepreneurship. and Small Business, Surabaya.

Sefa. 2018. Small Enterprise Finance Agency (SOC) Ltd Corporate Plan Financial Year 2018/19. Ref No: 2/5/1/1.

Singh, A. S. 2014. Conducting Case Study Research in Non-Profit Organisations. *Qualitative Market Research: An International Journal*, 17: 77–84.

Shepherd, D. A., Williams, T. A., and Patzelt, H. 2015. Thinking about entrepreneurial decision-making review and research agenda. Journal of management, 41(1), 11- 46.

Syden, M., and Gordon, K. S. 2014. Entrepreneurial Awareness among High School Learners, *Mediterranean Journal of Social Sciences*, 5(8): 146-159.

Solomon. G. 2004. *Entrepreneurship and the impact of entrepreneurial orientation training on SMMEs in the South African context: A longitudinal approach* [online]. Available at: www.etd.uwc.ac.za (Accessed on 2 June 2017).

Ács. Z. J, Szerb. L and Lloyd. A. 2018. The Global Entrepreneurship Index. The Global Entrepreneurship and Development Institute, Washington, D.C.

Statistics South Africa, 2019. *Quarterly Labour Force Survey. Statistical release P0211*. South Africa, Pretoria: Statistics South Africa [online]. Available at: www.statssa.gov.za/publications/P0211/P02111stQuarter2019.pdf *(Accessed on 25 April 2019).*

Swisher, L. L., Beckstead J. W. and Bebeau M. J. 2004. *Factor Analysis as a Tool for Survey Analysis Using a Professional Role Orientation Inventory as an Example.* Physical Therapy, 84(9): 784-799.

Taherdoost, H., Sahibuddin, S. and Jalaliyoon, N. 2014. *Exploratory Factor Analysis; Concepts and Theory*. in *International Conference on Mathematical-Computational and Statistical-Sciences*. Gdansk-Wrzeszcz, Poland.

F, E., and Renner, M. 2003. *Analysing qualitative data. Program Development and Evaluation*. Cooperative Extension [online]. Available at: http://betterevaluation.org (Accessed on 12 June 2016).

Taber, K.S. 2017. The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 1-24.

Theron, P. M. 2015. Coding and data analysis during qualitative empirical research in Practical Theology, *Die Skriflig/In Luce Verbi*. 49(3): 1-9.

Trochim, K.M. 2009. *The Research Methods Knowledge Base*. 2nd ed. Niagara Fall, NY, USA: Biztantra.

Tshikovhi, N. and Mvula, A.E. 2014. Entrepreneurship Education and Its Concerns in South African Universities, *International Journal of Higher Education Management,* 1(1): 77-85.

Ubulom, W. J. and Enyoghasim, M. 2012. Developing Entrepreneurial Skills through Business Education Programme to Curb Youth Restiveness for Sustainable Niger Delta Development. *European Journal of Business and Management.* 4(21): 68-75.

United Nations, Department of Economic and Social Affairs, Population Division. 2019. World Economic Situation and Prospects: The 2019 Revision. New York: United Nations.

Utami C. W. 2017. Attitude, Subjective Norms, Perceived Behaviour, Entrepreneurship Education and Self-efficacy toward Entrepreneurial Intention University Student in Indonesia; *European Research Studies Journal.* [online]. Available at https://www.ersj.eu/repec/ers/papers (Accessed on 14 May 2018)

Uygun, R. and Kasimoglu, M. 2013. The emergence of entrepreneurial intentions in indigenous entrepreneurs: The role of personal background on the antecedents of intentions. *International Journal of Business Management,* 8(5): 24-40.

Valerio, A., Parton, B. and Robb, A. 2014. *Entrepreneurship Education and Training Programs around the World - Dimensions for Success.* Washington, DC: World Bank.

Valliant, R., Dorfman, A.H. and Royall, R.M. 2000. *Finite Population Sampling and Inference, A Prediction Approach,* New York: Wiley.

Von Graevenitz, G., Harhoff, D., and Weber, R. 2010. The effects of entrepreneurship education. *Journal of Economic Behavior and Organization,* 76 (1): 90–112.

Watson, S. 1998. A primer in survey research. Journal of Continuing HigherEducation, 46(1): 31-40.

Wang, W., Lu, W. and Millington, J.K. 2011. Determinants of entrepreneurial intention among college students in China and USA. *Journal of Global Entrepreneurship Research*, 1(1), 35-44.11.

Weber, R. 2011. *Evaluating entrepreneurship education*. Munich: Springer

Weinberg, S.L. and Abramowitz, S.K. 2008. *Statistics Using SPSS.* 2nd ed. Cambridge: Cambridge University Press.

Williams, C.M. and Subich, L.M. 2006. The gendered nature of career related learning experiences: A social cognitive career theory perspective. *Journal of Vocational Behavior,* 69(2): 262–275.

Yurtkoru, S. Kuşcu, Z.K. and Doğanay, A. 2014. Exploring the Antecedents of Entrepreneurial Intention on Turkish University Students, *Procedia - Social and Behavioral Sciences*, 150: 841-850.

Zain, Z.M., Akram, A.M. and Ghani, E.K. 2010. Entrepreneurship intentions among Malaysian business students. *Canadian Social Science*, 6(3):34-44.

Zohrabi, M. 2003. Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings, *Theory and Practice in Language Studies*. 3(2): 254-262.

ANNEXURES A: QUESTIONNAIRE

Learner Feedback Survey

Dear Grade, 12 Learner

My name is Steven Tshehla. I am an MCOM student in the College of Economic and Management Sciences at the University of South Africa (UNISA) under the supervision of Dr. Kudakwashe Chodokufa. You are invited to participate in a research study entitled: **The effectiveness of entrepreneurship education in South African High Schools**.

I would like to invite you to take part in a survey being conducted by myself through the University of South Africa to seek your views on the effectiveness of entrepreneurship education in South African High Schools. The outcomes play an important role in the continuous improvement and enhancement of entrepreneurship education, training and assessment in high schools. The survey should take approximately 15 minutes to complete, your response is private and confidential. Individual respondents will not be identified in any data or reports. Survey responses will not be linked with enrolment records.

Participation in this survey is highly valued, but voluntary. You are free to withdraw consent at any time. Your anonymity and the confidentiality of your response will be protected to the fullest possible extent within the limits of the law.

If you would like to be informed of the final research findings, or should you require any further information about any aspect of this study, please contact Steven Tshehla on 082 261 8381 or via email at. stevent@sentech.co.za. Should you have concerns about the way in which the research has been conducted, you may contact my supervisor, Dr. Kudakwashe Chodokufa on 012 429 4548 or via email at chodok@unisa.ac.za

Thank you for considering your involvement in this survey. I wish you all the best in your future education and career.

Yours sincerely
Steven Tshehla (46717757)

Section 1: Demographics

Kindly answer the questions provided by TICKING (✓) in the box that represents your answer.

1. **Please indicate if you are currently in grade 12?** Yes ☐ No ☐

2. **Gender:** Male ☐ Female ☐

3. **Please indicate the township in which your school is located.**

Mamelodi	☐	Soshanguve	☐	Atteridgeville	☐

4. **Please indicate your position in the Family (birth position).**

First-Born	☐	Middle- Child	☐	Last-Born	☐	other	☐

5. **Does your family own a business?** Yes ☐ No ☐

6. **Please indicate your current main field of study.**

Social Sciences	☐	Commerce	☐	Science	☐

7. **Is entrepreneurship part of any of your subjects that you learn at school?**

Yes	☐	No	☐

8. **After grade 12 do you have an intention to go to.**

University	☐	Vocational Training (TVET)	☐	Look for Employment	☐

Section 2: Entrepreneurship Education, knowledge and skills

Kindly answer the questions provided by TICKING (✓) in the box that represents your answer.

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1.	In the Economic Management science class, we are taught about what entrepreneurship is.					
2.	In the EMS class, we are taught how to draft a business plan.					
3.	As learners we are sometimes required of come up with business ideas which we present in the EMS class.					
4.	We sometimes conduct research from the internet about different aspects of entrepreneurship.					
5.	We sometimes conduct research within the community about different aspects of entrepreneurship.					

6.	We are sometimes required to do entrepreneurship experimental activities in my EMS class.					
7.	We are sometimes required to sell some goods to fellow learners.					
8.	At my school we sometimes get presentations from successful entrepreneurs.					
9.	After learning about entrepreneurship, I am encouraged to start my own business.					
10.	The content and the teaching of entrepreneurship at my school gives me confidence to engage other people about business.					
11.	The content and the teaching of EMS at my school helped me to easily identify business opportunities.					
12.	The content and the teaching of EMS at my school has encouraged me put money into good use.					
13.	Through the practical experiment projects of EMS at my school, I now know how to make money through entrepreneurship activities.					
14.	I will be able to start my own business using what I have been taught in my EMS class.					
15.	From what I have been taught in the EMS class I will be able to resolve business related issues.					
16.	What is being taught in EMS class has made me excited about entrepreneurship as a career.					
17.	I believe starting a new business is an attractive career.					
18.	I am encouraged to start a new business as a career.					

Section 3: - Entrepreneurship Intent

Kindly answer the questions provided by TICKING (✓) in the box that represents your answer.

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I will start my own business after completing high school.					
2.	I will start my own business after completing my tertiary education. e.g. university degree.					
3.	My exposure to EMS as a subject has resulted in my intention to start a business.					
4.	I have no intention to work for someone else after completing school but to work for myself.					
5.	I intend to start a new business at some point in the future.					
6.	I have an intention to further my studies in entrepreneurship after high school.					

ANNEXURE B: RESEARCH ETHICS REVIEW CERTIFICATE

UNISA university of south africa

UNISA DESTTL ETHICS REVIEW COMMITTEE

Date: 29 January 2019

ERC Reference # :
2018_CEMS_ESTTL_014
Name : Steven Sotja Tshehla
Student #: 46717757

Dear Mr Steven Sotja Tshehla

Decision: Ethics Approval from January 2019 to January 2022

Researcher(s): Steven Sotja Tshehla
stevent@sentech.co.za

Supervisor (s): Ms Kudakwashe Chodokufa
chodok@unisa.ac.za

Working title of research:

The effectiveness of entrepreneurship education in South African High Schools

Qualification: MComm Business Management (Entrepreneurship)

Thank you for the application for research ethics clearance by the Unisa DESTTL Ethics Review Committee for the above mentioned research. Ethics approval is granted for three years.

*The **medium risk application** was **expedited** by the DESTTL Ethics Review Committee in January 2019 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was approved on the 29th of January 2019.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the DESTTL Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date (01/2022). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **2018_CEMS_ESTTL_014** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

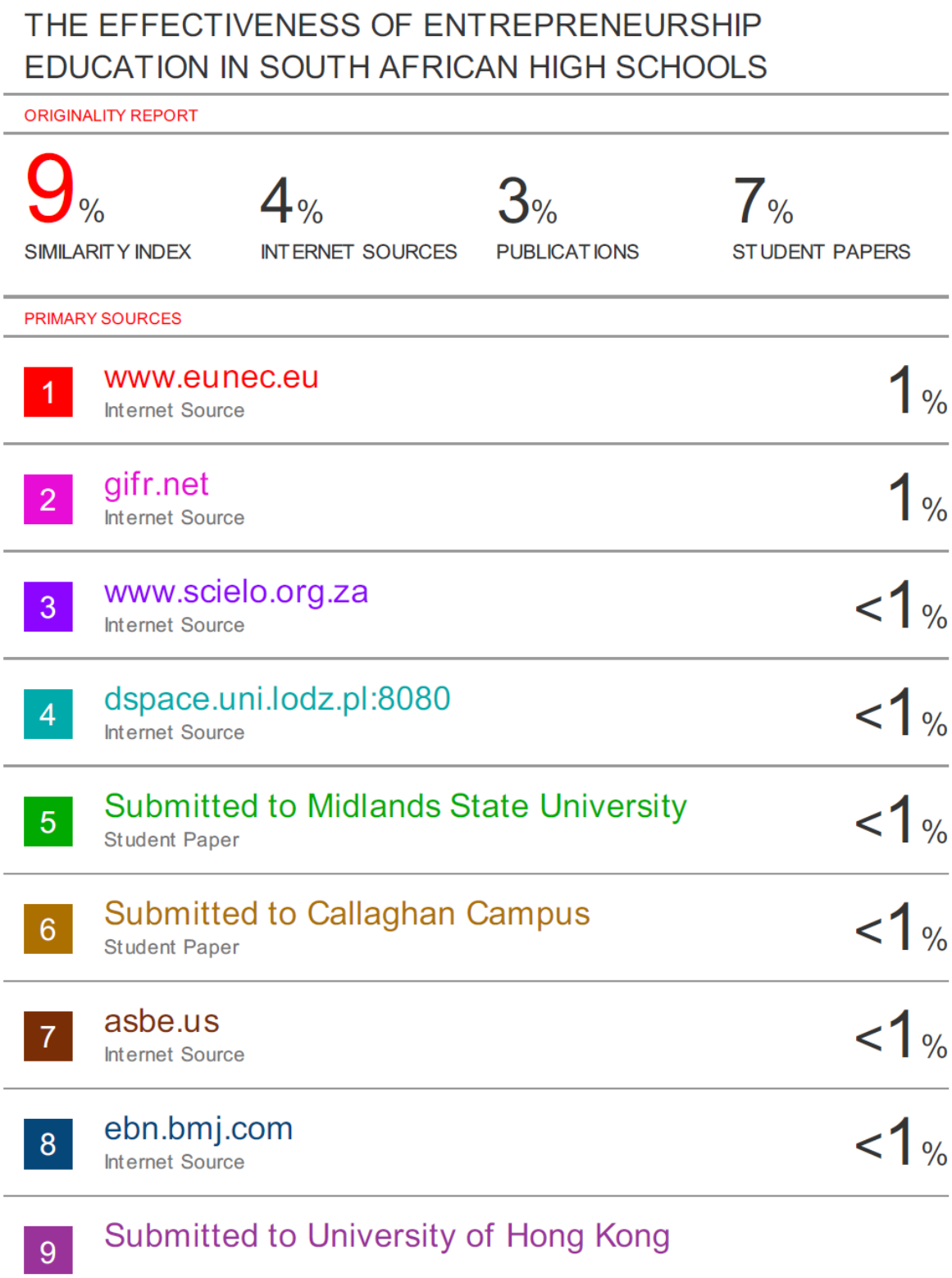
Yours sincerely,

Mrs C Poole
Chair of DESTTL ERC
E-mail: esttl_rerc@unisa.ac.za
Tel: (012) 433-4668

Prof M Mogale
Executive Dean: CEMS
E-mail: mogalmt@unisa.ac.za
Tel: (012) 429-4419

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

ANNEXURE C: TURNITIN REPORT



THE EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN SOUTH AFRICAN HIGH SCHOOLS

ORIGINALITY REPORT

9%	4%	3%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.eunec.eu Internet Source	1%
2	gifr.net Internet Source	1%
3	www.scielo.org.za Internet Source	<1%
4	dspace.uni.lodz.pl:8080 Internet Source	<1%
5	Submitted to Midlands State University Student Paper	<1%
6	Submitted to Callaghan Campus Student Paper	<1%
7	asbe.us Internet Source	<1%
8	ebn.bmj.com Internet Source	<1%
9	Submitted to University of Hong Kong	